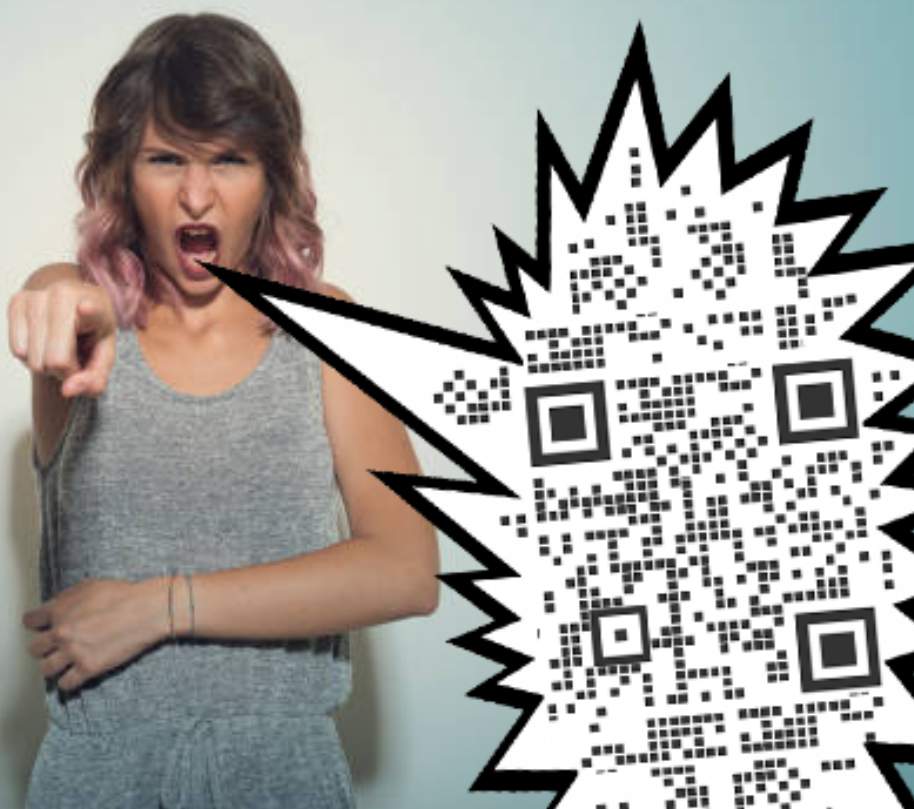
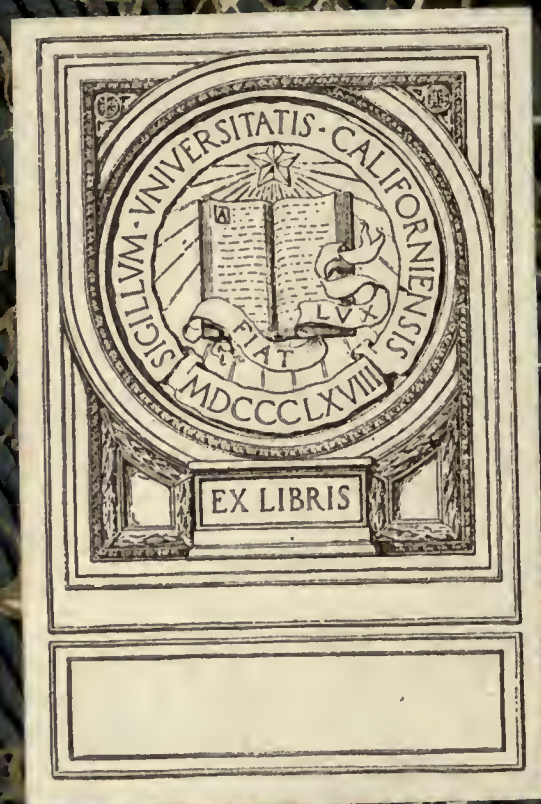
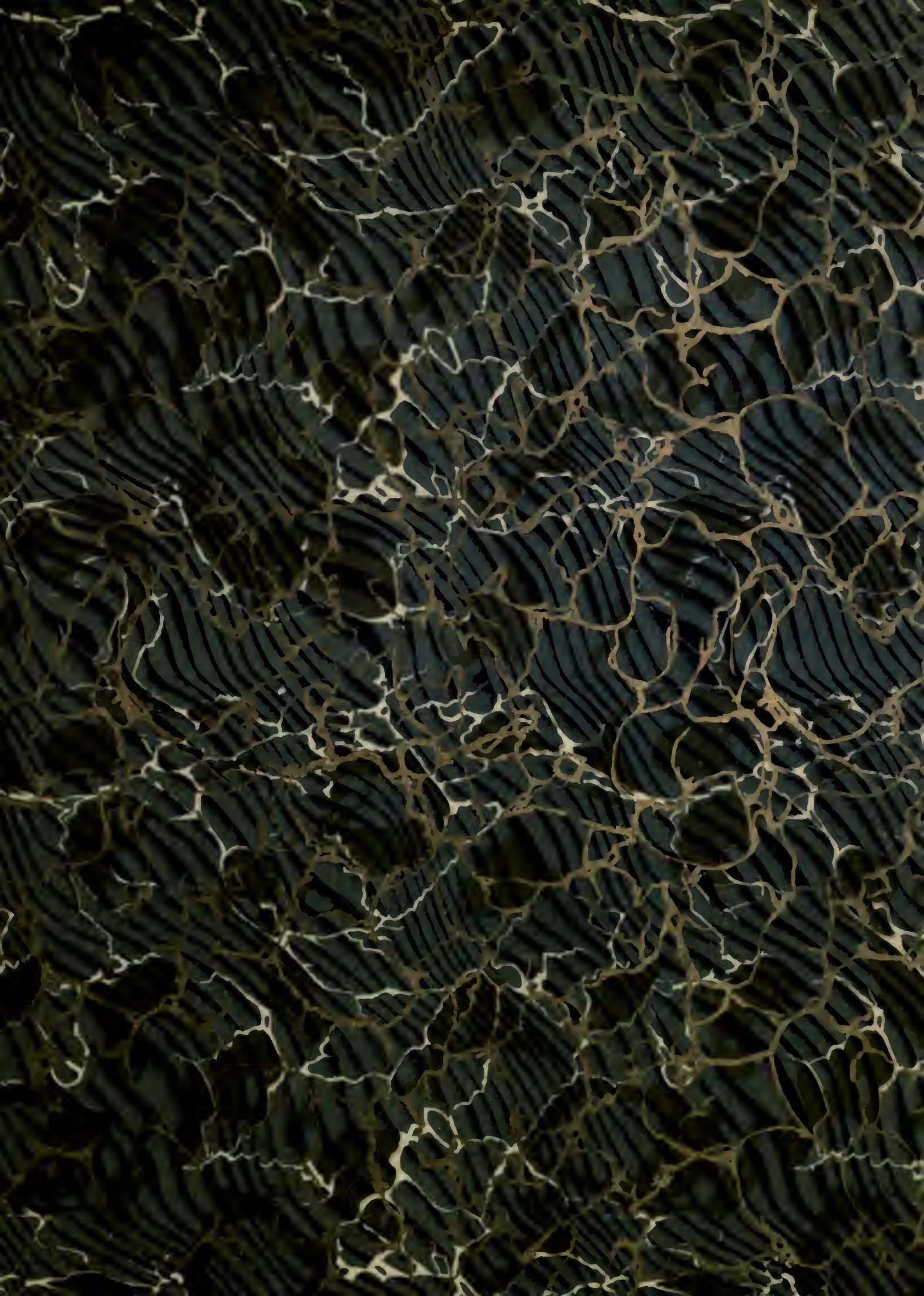


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Reports of
The Princeton University Expeditions
to Patagonia, 1896-1899

J. B. HATCHER, IN CHARGE

EDITED BY

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VOLUME II—ORNITHOLOGY

PART III

CHARADRIIDÆ — ANATIDÆ

BY

WILLIAM EARLE DODGE SCOTT
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ASSOCIATED WITH

R. BOWDLER SHARPE
BRITISH MUSEUM OF NATURAL HISTORY

(Pp. 345-504. Pl. I)

PRINCETON, N. J.
THE UNIVERSITY
STUTTGART

E. SCHWEIZERBART'SCHE VERLAGSHANDLUNG (NAGELE & DR. SPROESSER)

1912

"This peculiar bird, combining characters of both Snipe and Rail, is an abundant resident at Concepcion, where it breeds.

"On September 18, 1880, I found two sets of two eggs each, laid without any attempt at a nest on the bare ground close to the edge of a marsh. The eggs, which were much incubated, were of nearly the same size at both ends and resembled closely, both in shape and coloration, the eggs of the common Nighthawk (*Chordeiles virginianus*), the ground color being almost obscured by a profusion of heavy dots and blotches of dark brown and black. The sitting birds flew directly from the eggs without any attempt to lead away from them. I usually found these birds abundant in the same meadows with the Snipe, often flushing both at the same time." (Barrows, Auk, I. p. 314, July, 1884.)

Subfamily PHALAROPODINÆ.

Sharpe, Cat. Bds. Brit. Mus. XXIV. p. 693 (1896); id., Hand-list Bds. I. p. 167 (1899).

Genus STEGANOPUS Vieillot.

Type.

Steganopus, Vieill. N. Dict. d'Hist. Nat. XXXII. p. 136 (1819); Sharpe, Cat. Bds. Brit. Mus. XXIV. p. 705 (1896); id., Hand-list Bds. I. p. 167 (1899) *S. tricolor*.
Holopodius, Bonap. Ann. Lyc. N. Y. 11. p. 342 (1828) . . . *S. tricolor*.

Geographical Range.—North and South America and the Falkland Islands.

STEGANOPUS TRICOLOR Vieillot.

Chorlito tarso comprimido, Azara, Apunt. III. p. 327 (1805: Paraguay).
Steganopus tricolor, Vieill. N. Dict. d'Hist. Nat. XXXII. p. 136 (1819); Sharpe, Cat. B. Brit. Mus. XXIV. p. 705 (1896); id. Hand-list B. I. p. 167 (1899); Martens, Hamb. Magalh. Sammelr. Vög. p. 15 (1900: South Patagonia and Falkland Islands).
Phalaropus wilsoni, Fraser, P. Z. S. 1843, p. 118 (Lake of Quintero, Chili, rare); Gray & Mitchell, Gen. B. III. p. 586, pl. 158 (1848); Scl. & Salv. Nomencl. Av. Neotr. p. 144 (1873: Chili); Durnf. Ibis, 1877, p. 42 (Chupat Valley, common), p. 198 (Buenos Aires, Feb.); Sec-

bohm, Geogr. Distr. Charadr. p. 342 (1888); Scl. & Huds. Argent. Orn. II. p. 180 (1889: Mendoza); Scl. Bull. Brit. Orn. Club, IV. p. VI (1894: Falkland Islands); id. Ibis, 1895, p. 145.

Phalaropus lobatus, Hartl. (nec Linn.) Ind. Azara, p. 25 (1847); Phil. & Landb. Cat. Av. Chil. p. 37 (1868).

Phalaropus frenatus, Pelz. Reise, Novara, Vög. p. 132 (1865: Chili).

Steganopus wilsoni, Baird, Brewer & Ridgw. Water Birds N. Amer. I. p. 335 (1884).

FIG. 175.



Steganopus tricolor. Adult female. Princeton University Museum. One half natural size.

GENERAL DESCRIPTION.

Size. — Adult Female Breeding. Total length, 10 inches.

Wing, 5.3 inches.

Culmen, 1.4 inch.

Tail, 2.3 inches.

Tarsus, 1.35 inch.

Adult male breeding. Total length, 9 inches.

Wing, 4.9 inches.

Culmen, 1.25 inch.

Tail, 1.9 inch.

Tarsus, 1.25 inch.

Color. — *Adult female breeding*.

Head: Forehead and crown uniform pearly greyish blue. Occiput white. Lores like the crown. A white spot in front of the eye, with a black margin. Upper eyelid white, lower one black, continuous with the black feathers in front of the eye. A black line starting below the loreal region at the base of the upper mandible, straight and clearly defined on its lower edge, becoming indefinite on its upper edge as it approaches the eye, passing below that organ and then widening out and passing at the auricular region and as a broad black bar down the side of the neck, and changing into rufous chestnut, continues down the sides of the back and scapulars. Below this black line the sides of the head and face are white.

Neck: Above white; the black line or band defining it on each side as described. Chin and upper throat white, changing on the throat to clear ferruginous or bright chestnut, which color prevails on the remainder of the under neck and, reaching up on the sides, is defined by the black neck-stripe. This chestnut area of the neck becomes paler as it approaches the breast, where it fades into a mere shading, and thence to the white of the lower parts.

Back: Middle of the back pearly grey-blue like crown, clearly defined by a broad streak of vinous chestnut on each side of the mantle. Scapulars chiefly deep vinous chestnut. Lower back and rump brown, the sides of the rump white. Central upper tail-coverts dusky brown, mottled and edged with white. Lateral upper tail-coverts pure white.

Tail: Central rectrices ashy brown, the remainder ashy brown on their exposed webs, but with an increasing amount of white on their inner webs, until the outer tail feather has generally a pure white inner web, strongly contrasted with ashy brown outer web.

FIG. 176.



Steganopus tricolor. Leg and foot. Natural size. From a bird in the British Museum.

Wings: Scapulars chiefly deep vinous chestnut. Upper wing-coverts uniform dull brown, the greater coverts narrowly edged with white. Bastard wing, primary coverts and quills dusky brown. The first primary with the shaft ivory white, the shafts of the other quills light brown.

Under parts: Chin and upper throat white. The rest of the throat abruptly clear bright chestnut, shading to paler, until this color disappears on the sides of the breast. The middle of the lower part of the neck, of the breast and the entire remainder of the lower parts pure white. Under wing-coverts and axillaries white.

Bill, black.

Feet and legs, bluish grey with black claws.

Iris, deep hazel brown.

Adult male in breeding plumage; much duller in color than the breeding female.

The upper parts are fuscous brown bordered with greyish brown. The vinous portions of the upper surface indicated, but dull and obscure. Rump and upper tail-coverts white, all the feathers except the lateral upper tail-coverts with a subterminal U-shaped line of dusky brown. The lateral upper tail-coverts pure white. Duller chestnut and rufous on the head, neck and lower parts, as in the female. Rest of lower parts white.

Adults in winter have the upper surface ashy grey, the feathers margined and fringed with white. Rump and upper tail-coverts white, the longer tail-coverts ashy grey with white edging. The ashy grey extends over the back of the neck and the crown of the head. The forehead, and a broad eyebrow, as well as the sides of the face white. A dusky triangular spot in front of the eye. Entire under part pure white.

Young birds have the upper surface mottled, the blackish feathers with sandy buff margins producing this effect. The rump feathers white with dusky centers and the upper tail-coverts pure white. Forehead, eyebrow, sides of face and under surface white, the rufous areas of the under surface of the full-plumaged bird replaced by isabelline; the sides of the breast and the flanks mottled, having dusky centers to the feathers.

Adults are in the full breeding plumage but a short period, the first of June being about the height of its development. By the last of July the fall moult is about half completed.

Geographical Range. — Breeds in Temperate North America from Illinois and Utah northward to the Saskatchewan region. Migrating south chiefly in the interior, through Central America, Brazil etc., to Patagonia and the Falkland Islands.

Wilson's Phalarope was not recorded by the naturalists of the Princeton Expeditions, though it is known to occur practically throughout Patagonia during the months of December, January and February. The descriptions are based on material in both the British Museum of Natural History and in the Princeton Museum.

Order ARDEIFORMES.

Sharpe, *Classif. Bds.* p. 75 (1891) (= Pelargiformes); *id.* *Hand-List Bds.* I, p. 184 (1899).

Suborder PLATALEÆ.

Sharpe, *Cat. Bds. Brit. Mus.* XXVI. p. 1. (1898) (= Order *Plataleæ*); *id.* *Hand-List Bds.* I, p. 184 (1899).

Family IBIDIDÆ.

Sharpe, *Cat. Bds. Brit. Mus.* XXVI. p. 2 (1898); *id.* *Hand-List Bds.* I, p. 184 (1899).

Genus THERISTICUS Wagler.

Type.

Theristicus, Wagler, *Isis*, 1832, p. 1231; Sharpe *Cat. Bds.*

Brit. Mus. XXVI. p. 21 (1898); *id.* *Hand-List Bds.*

I, 186 (1899) *T. caudatus*.

Geographical Range. — Restricted to South America.

THERISTICUS MELANOPIS (Gmelin).

? Le Petit Courly d'Amérique, *Briss. Orn.* V. p. 337 (1760).

? Grey Ibis, *Lath. Gen. Syn.* III. pt. i, p. 110 (1785).

Black-faced Ibis, *Lath. tom. cit.*, p. 108, pl. LXXIX ex Forst:

? *Tantalus griseus*, *Gm. Syst. Nat.* I. p. 653 (1788).

Tantalus melanopis, *Gm. tom. cit.*, p. 653.

Mandurria ó curucàn, *Azara, Apunt.* II. p. 189 (1805).

Ibis melanopis, Vieill. N. Dict. d'Hist. Nat. XVI. p. 20 (1817); Des Murs in Gay's Hist. Chil. Zool. I. p. 417 (1847); Hartl. Naum. 1853, p. 222 (Valdivia); Burm. J. f. O. 1860, p. 265 (Mendoza: Rio Paraná: Cordova); Schl. Mus. Pays-Bas. V. Ibis, p. 7 pt. (1863: Chili); Huds. P. Z. S. 1872, p. 549 (Rio Negro); Philippi, Orn. IV. p. 159 (1888; Cochinal, Tarapacá); Burm. An. Mus. Nac. Buenos Aires, III. part X. p. 247 (1888: Patagonia), part XI. p. 319 (1890).

Theristicus melanopis, Wagl. Isis, 1832, p. 1232; Gould, Voy. Beagle, Birds, p. 128 (1841: Patagonia); Gray, List B. part iii. p. 91 (1844: Str. Magellan: Chili); Pelz. Reis. Novara. Vög. p. 127 (1865: Chili); Cunn. Ibis, 1868, p. 126 (Sandy Point), 1869, p. 233 (San Nicolas Bay, Patagonia); Scl. & Salv. Ibis, 1870, p. 499 (Sandy Point); Newt. t. c. p. 502 (Elizabeth Isl. Nov. eggs); id. P. Z. S. 1871, p. 156, pl. IV fig. 8 (egg); Cunn. Nat. Hist. Str. Magell. pp. 73, 136, 334 (1871); Scl. & Salv. Nomencl. Av. Neotr. p. 127 pt. (1873); Durnf. Ibis, 1877, p. 190 (Buenos Aires, winter, May-Oct.), 1878, p. 400 (Sengel River, Nov.: Chupat Valley ? breeding); Scl. & Salv. P. Z. S. 1878, p. 436 (Sandy Point); Durnf. Ibis, 1880, p. 424 (Rio Pasaje, June); Scl. & Salv. Voy. Chall. II. Birds, p. 106 (1880); Doering, Expl. al Rio Negro, Zool. p. 52 (1881-82: Rio Colorado); Barrows, Auk, I. p. 272 (1884: Lower Uruguay); Sharpe, Cat. B. Brit. Mus. XXVI. p. 21 (1898); Martens, Vög. Hamb. Magalh. Sammelr. p. 21 (1900); Carabajal, La Patagonia, pt. ii. p. 272 (1900); Salvad. Ibis, 1900, p. 504; Oates, Cat Bds. Eggs Brit. Mus. II. p. 101 (1902).

Theristicus melanops, Fraser, P. Z. S. 1843, p. 117 (Interior of Chili); Cunn. Ibis, 1868, p. 488 (Elizabeth Island, breeding, Oct.-Nov.); Doering, Expl. al Rio Negro, Zool. p. 52 (1881-82: Rio Colorado).

Tantalus melanops, Forst. Icon. ined. pl. 117; id. Descr. Anim. p. 332 (1844: Staten Isl.).

Geronticus melanopis, Gray, Gen. B. III. p. 566 (1847); Hartl. Ind. Azara, p. 23 (1847); Gray, Handl. B. III. p. 40, no. 10,233 (1871); Huds. P. Z. S. 1871, p. 261 (Buenos Aires).

Ibis albicollis (nec Gm.), Burm. La Plata Reis, II. p. 510 (1861: Rio Paraná; Mendoza: Tucuman).

Geronticus albicollis (nec Gm.), Pelz. Orn. Bras. p. 307 (1871).

Theristicus caudatus (nec Bodd.), Elliot, P. Z. S. 1877, p. 498 (pt.); Scl.

& Huds. Argent. Orn. II. p. 110 (1889: cold weather visitor); Graham Kerr, Ibis, 1891, p. 270, 1892, p. 145 (Pilcomayo, Fortin Page); James, New List of Chil. B. p. 8 (1892); Holland, Ibis, 1892, p. 205 (Estancia Espartilla); Schalow, Zool. Jahrb. Suppl. IV. p. 678 (1898: Villarica).

Theristicus melanopes, Heine & Reichen. Nomencl. Mus. Hein. p. 313 (1890: Straits of Magellan: Chili).

Ibis (*Theristicus*) *caudatus* (nec Bodd.), Oust. Miss. Scient. Cap Horn, Oiseaux, p. 140 (1891).

Ibis caudatus (nec Bodd.), Frenzel, J. f. O. 1891, p. 124 (Cordova, Arg. Rep.).

Theristicus melanopsis, Sharpe, Hand-list B. I. p. 186 (1899).

GENERAL DESCRIPTION.

Size.—Adult male. (P. U. O. C. 7969. Rio Chico, Patagonia, 6 March 1898. A. E. Colburn.)

Total length, about 28 inches.

Wing, 16.3.

Culmen, 6.2.

Tail, 7.9.

Tarsus, 3.1.

The sexes do not differ materially in size.

Color.—Adult male (cited). General color above head and neck orange-chestnut, shaded over a white ground; back silvery grey with sandy buff edging to the feathers. Below, orange-chestnut shaded on a white ground to and over breast, then abruptly sooty black.

Head: Crown deep orange-chestnut, the bases of all the feathers clear white, shading to pale orange on the sides of the face and head. A naked black area extending from the bill to back of the head and surrounding it.

Neck: Above like crown, but paler, except close to the body; shading to much paler on the sides and becoming almost white below. A naked black throat-patch, having on *the chin* a long narrow isabelline colored patch of feathers.

Back: Mantle silvery grey, with sandy buff margins and a subterminal dusky band to each feather. Lower back, rump and upper tail-coverts black, with a dark green gloss.

Tail: Rectrices black, with a dark green gloss.

Wings: Upper wing-coverts silvery grey, lighter than the mantle, the

outer ones almost white. Bastard wing, primary coverts and primaries black, with a greenish purple gloss. Secondaries black, with a greenish purple gloss, the inner ones externally grey and the innermost ones colored and marked like the back.

Lower parts: Chin and throat black and naked, with a narrow median patch of isabelline colored feathers between the bases of the lower mandi-

FIG. 177.



Theristicus melanopsis. Head from front, showing bare region about the eyes. Male, 7856, Princeton University Collection. About $\frac{1}{3}$ natural size.

FIG. 178.



Theristicus melanopsis. Head, showing bare skin on throat and about the eyes. Male, 7856, Princeton University Collection. About $\frac{1}{3}$ natural size.

bles. Rest of the under neck whitish suffused into paler orange-chestnut by the tips of each feather being that color. This color extends back to and over the lower breast, being interrupted by a broken collar of grey feathers on the sides of the chest.

The rest of the lower parts slaty black; the sides and flanks quite black; the under tail-coverts deep black, with a green gloss. Under wing-coverts and axillaries black, with a greenish purple gloss. Quills from below dark bronzy green.

Feet "carmine or scarlet" (C. Darwin).

Iris "scarlet" (C. Darwin).

Burmeister says "bill and naked part of face and throat black; the tip of the bill dull greenish; feet dull fleshy red; iris paler brown." These notes regarding the color of the legs and feet, as well as that of the iris, probably refer to an adult bird in winter or to an immature individual.

Female, eyes red, feet pink, bill black.

Male, eyes yellow, bill green, legs pinkish with black scales.

(Sclater & Salvin, on Birds Antarctic America, Voy. H. M. S. 'Chall.' II. Birds, No. ix. p. 436, 1878.)

Adult female.—Differs from the male in having ashy margins to the feathers of the back, instead of sandy buff.

There appears to be no difference in the size or proportion of the patch of feathers on the chin in correlation with sex.

FIG. 179.



Theristicus melanopis. Male. 7856, Princeton University Collection. Foot and bare portion of leg from front. About $\frac{1}{3}$ natural size.

Young birds have the entire throat feathered, the cheeks only being naked. The upper surface is greyer and the head, neck, and breast whiter than in adults. The bill is generally shorter.

Geographical Range.—South America from the Straits of Magellan north to Peru and northern Argentina and the province of Matto Grosso, Brazil.

The Grey Ibis was taken and observed by the naturalists of the Princeton Expeditions throughout Patagonia. Mr. Hatcher has furnished the following notes, which are supplemented by those of other observers.

"The Ibis was common on the plains, especially so near the coast. Along the cliffs of the seashore I observed it frequently going to roost. It is a singularly noisy and very conspicuous bird." (J. B. Hatcher in MSS.)

"This bird (*Theristicus melanopis*) the *bandurria* of the Chilians (so called in consequence of its remarkable note being supposed to resemble that musical instrument), is common in the open country of Patagonia, as well as in Chili and the Argentine Republic. It is of large size, and possesses very handsome plumage — the upper parts, wings, and tail, being of various shades of grey, black, and dark-green; while the head, neck, and breast are of a yellowish-buff hue. The bill and a naked gular space are black, and the legs dull red. The flight is very strong, and the bird requires to be heavily hit to bring it down. The cry is very peculiar and sonorous, and not easy to describe. It has been compared by Mr. Darwin to the neighing of a guanaco, but in this I cannot agree with him. Those specimens examined by the above mentioned distinguished naturalist had 'grasshoppers, cicadæ, small lizards, and even scorpions,' in their stomachs; while, in those examined by me, caterpillars appeared to have been the principal source of aliment. On carefully examining the respiratory organs of an individual shot in January 1869, I found that the portion of the trachea below the insertion of the sterno-tracheal muscles, though presenting no striking peculiarity of form, had the rings anchylosed so as to form an immovable tube, and this no doubt serves to modify the voice." (Cunn. Nat. Hist. Str. Magell. 1871, pp. 136–137.)

"We saw a flock of *bandurrias* (*Theristicus melanopis*), several kingfishers identical with the species occurring in the Strait and Channels, some rather large pigeons (*Columba Fitzroyii*), many black vultures (*Cathartes aura*), and brown hawks (*Milvago chimango*), which last were very annoying from their habit of screaming; large flocks of a small curlew (*Numenius Hudsonicus*), feeding on the mud-flats uncovered by the tide; some godwits (*Limosa Hudsonica*), spur-winged lapwings (*Vanellus Cayanus*), gulls, cormorants, steamer-ducks, and small grebes. Some pigeons, curlews, and godwits, with a single grebe, were shot, the last-mentioned bird being afterwards ascertained to be the *Podilymbus podiceps*." (Ibid. p. 334.)

"The black-faced ibis of Patagonia, a bird nearly as large as a turkey, indulges in a curious mad performance, usually in the evening when feeding time is over. The birds of a flock, while winging their way to the roosting-place, all at once seem possessed with frenzy, simultaneously dashing downwards with amazing violence, doubling about in the most eccentric manner; and when close to the surface rising again to repeat the action, all the while making the air palpitate for miles around with their

hard, metallic cries. Other ibises, also birds of other genera, have similar aerial performances." (Huds. Natur. La Plata, 1892, pp. 265-266.)

Genus PLEGADIS Kaup.

Type.

- Plegadis*, Kaup, Natürl. Syst. p. 82 (1829); Sharpe, Cat.
Bds. Brit. Mus. XXVI. p. 29 (1889); id. Hand-List
Bds. I, p. 187 (1899) *P. falcinellus*.
Tantalides, Wagler, Isis. 1832, p. 1231 *P. falcinellus*.
Falcinellus, Gray, List Gen. Bds. 1841, p. 87 (nec Vieill.
1816) *P. falcinellus*.
Plegadornis, Brehm, Naum. 1855, p. 290 *P. falcinellus*.

Geographical Range.—Nearly the entire warmer portions of Europe and North America, and Australia, Africa, India and South America.

PLEGADIS GUARAUNA (Linnæus).

- Le Courly brun d'Amérique, Briss. Orn. V. p. 330 (1760).
? Le Courly varié du Mexique, Briss. tom. cit. p. 333.
Scolopax guarauna, Linn. Syst. Nat. I. p. 242 (1766), ex Briss. p. 330.
? L'Acalot, Buff. Hist. Nat. Ois. VIII. p. 45 (1781), ex Briss. p. 333.
? Mexican Ibis, Lath. Gen. Syn. III. pt. i, p. 108 (1785), ex Buff.
Brazilian Whimbrel, Lath. tom. cit. p. 125, ex Linnæus.
Tantalus mexicanus, Gm. Syst. Nat. I. p. 652 (1788) ex Lath.
Numenius guarauna, Lath. Ind. Orn. II. p. 712 (1790).
Curucán cuello jaspeado, Azara, Apunt. III. p. 197 (1805).
Numenius chihi, Vieill. N. Dict. d'Hist. Nat. VIII. p. 303 (1817), ex Azara.
? *Ibis mexicana*, Vieill. op. cit. XVI. p. 9 (1817).
Tantalus chalcopterus (nec Vieill.) Temm. Pl. Col. V. pl. 511 (1830: Chili).
Ibis guarauna Licht. Verz. Doubl. p. 75 (1823 Montevideo); Gray, Gen. B. III. p. 565 (1847); Hartl. Ind. Azara, p. 23 (1847); id. Naum. 1853, p. 222 (Valdivia); Cass. U. S. Astr. Exp. p. 302 (1855: Chili & Patagonia); Carabajal, La Patagonia, II. p. 272 (1900).
Tantalides guarauna, Wagl. Isis, 1832, p. 1231.
Ibis erythrorhyncha, Gould, P. Z. S. 1837, p. 127 (Haiti).

- Ibis* (*Falcinellus*) *ordi*, Darwin, Voy. Beagle, Birds, p. 129 (1841: Rio Negro: Bahia Blanca: Buenos Aires).
- Falcinellus guarauna*, Gray, List B. Brit. Mus., part iii, p. 93 (1844: Valparaiso); Des Murs in Gay's Hist. Chil. Zool. I. p. 418 (1847).
- Ibis falcinellus* (nec Linn.), Des Murs in Gay's Hist. Chil. Zool. I. p. 416 (1847); Schl. Mus. Pays-Bas, V. Ibis, p. 2 pt. (1863: Chili); Pelz. Reis. Novara, Vög. p. 125 (1865: Chili); Scl. & Salv. P. Z. S. 1868, p. 145 (Conchitas, summer visitor); Huds. P. Z. S. 1870, p. 799 (Gualicho, 170 miles south of Buenos Aires, breeding); Philippi, Ornith. IV. p. 160 (1888: Antofagasta, Tarapacá); Lataste, Actes Soc. Scient. Chili, III. p. 106 (1893: Nuble, Cordilleras of Chili).
- Ibis brevirostris*, Peale, U. S. Expl. Exped. p. 219 (1848: Chili: River Rimac, Peru).
- Plegadis guaranna*, Bonap. C. R. XL. p. 725 (1885); Gibson, Ibis, 1880, p. 160 (Buenos Aires, resident); Berl. J. f. O. 1887, p. 124 (Paraguay); Withington, Ibis, 1888, p. 471 (Lomas de Zamora); Scl. & Huds. Argent. Orn. IV. p. 109 (1889); Holland, Ibis, 1890, p. 425 (Buenos Aires); Graham Kerr, Ibis, 1891, p. 270, 1892, p. 145 (Fortin Page, Pilcomayo, Sept.); James, New List Chil. B. p. 8 (1892); Holland, Ibis, 1892, p. 205 (Estancia Espartilla, partial migration, Aug. to Nov.); Sharpe, Cat. B. Brit. Mus. XXVI. p. 34 (1898); id. Handlist B. I. p. 187 (1899); Martens, Vög. Hamb. Magalh. Sammlr. p. 21 (1900); Albert, Estud. Av. Chil. II. p. 428 (1901); Oates, Cat. Birds' Eggs Brit. Mus. II. p. 102 (Pl. v. fig. 7), (1902).
- Ibis ordi* (nec Bonap.), Cass. in Baird, Cass. & Sawr. B. N. Amer. p. 685 (1858).
- Ibis chalcoptera* (nec Vieill.), Burm. La Plata Reis. II. p. 511 (1861: Paraná: Mendoza); C. Burm. An. Mus. Nac. Buenos Aires, III. part x, p. 247 (1888: Northern Patagonia).
- Falcinellus ordi*, Coues, Proc. Acad. Phila. 1866, p. 96.
- Ibis falcinellus* var. *ordi*, Coues, Key N. Amer. B. p. 263 (1872).
- Ibis thalassima*, Ridgw. Amer. Nat. viii. p. 110 (1874).
- Falcinellus igneus*, Scl. & Salv. (nec Gm.), Nomencl. Av. Neotr. p. 126, pt. (1873); Durnf. Ibis, 1876, p. 162 (Buenos Aires), 1877, p. 189 (Baradero, April); Doering, Expl. al Rio Negro, Zool. p. 52 (1881-82: abundant in the marshes of the Pampas; Rio Colorado); White,

P. Z. S. 1882, p. 625 (Punta Lara, Buenos Aires); Carabajal, La Patagonia, part ii, p. 272 (1900).

Falcinellus thalassinus, Elliot, P. Z. S. 1877, p. 507 (Chili: Straits of Magellan).

Plegadis falcinellus, Barrows (nec Linn.), Auk, I. p. 272 (1884: Concepcion, resident).

GENERAL DESCRIPTION.

Size. — Adult male. (P. U. O. C. 8640, La Plata, February, 1894. S. Pozzi.) Total length, about 21 inches.

Wing, 10.7.

Culmen, 5.2.

Tail, 3.7.

Tarsus, 4.2.

The adult female is smaller and with a relatively shorter bill. There is a very considerable individual variation in size.

FIG. 180.



Profile of head, *Plegadis guarauna*. 8640 Princeton University Collection. About $\frac{1}{3}$ natural size.

Color. — Adult male (cited). General color above bronzy green and below rich deep chestnut.

Head: Forehead and crown glossy green. *A narrow frontal band across the forehead, reaching back and bordering the naked area around the eye, dull white.* Sides of head and face deep chestnut, with a maroon tinge. The base of the cheeks shaded with bronzy green. *Naked skin about the lores, eyes and chin, crimson lake in life, drying to yellowish brown.*

Neck deep chestnut, maroon in tone, with a naked crimson lake area at base of chin, bordered narrowly with dull white feathers.

Back: Upper mantle deep chestnut, with a maroon tone and with iridescent metallic purple, green and bronzy reflections. Scapulars like the mantle, but more iridescent. The lower back, rump and upper tail-coverts dusky, with purple, green and bronzy, iridescent, metallic reflections.

Tail: Dusky or blackish, with the same reflections accentuated.

Wings: Lesser upper wing-coverts deep rich chestnut, with a maroon tone. Medium and greater coverts duller chestnut, with much the same reflections as the scapulars. Bastard wing, primary coverts and primaries entirely glossy green, with bronzy reflections. Secondaries also glossy green with purple reflections.

Under Surface: Bare skin at base of chin, crimson lake (becoming dull yellowish brown in dried skins); a narrow line of dull white feathers bordering this area. The whole surface from neck to under tail-coverts deep rich chestnut with a maroon tone. Under tail-coverts dusky or blackish, with metallic reflections of purple and green. Under wing-coverts and axillaries blackish, with green and purple reflections. Quills from below glossed with dark green.

Bill: Brown horn color, tinged in the breeding season with reddish.

Legs and feet: Dull greenish brown, changing to deep red in the breeding season.

Iris: Deep hazel brown, becoming in many individuals cherry red in the breeding season.

Adult Female. — Similar to the adult male in color.

Adults in Winter. — "The winter plumage of adults appears to consist in the entire loss of the chestnut plumage of the head, back and scapulars; the rest of the plumage remains metallic with the same varying shades of green and purple, but the wings are more bronzy and the wing-coverts brighter metallic green. The head and neck are entirely streaked with black and whitish, and in the spring the red feathers of the summer plumage are gained by a moult." (Sharpe, Cat. Bds. Brit. Mus. XXVI. p. 33, 1898.) With regard to winter adults of *P. falcinellus*. On p. 36. t. c. the same writer says: "The winter plumage (cf. *P. guarana*) and young plumage are exactly analogous to those of *Plegadis falcinellus*."

Young birds of the year are similar to the winter plumage of adults. The whole of the chestnut regions are dull greyish brown, striped with whitish on the head and neck. The green of the upper surface and wings is even

in character and lacks the metallic purple and bronzes that characterize the adults at this season.

Newly hatched downy young are black.

Geographical Range. — Southern North America, ranging on the Atlantic coast as far north as Central Florida. Throughout Texas and Arizona to California and thence north along the Pacific coast to Oregon. Tropical America and south to the Argentine Republic and Chili, Patagonia.

FIG. 181.



Plegadis guarauna. Immature. 8643
Princeton University Collection. About $\frac{1}{4}$
natural size.

FIG. 182.



Plegadis guarauna. Immature. 8643
Princeton University Collection. About $\frac{1}{4}$
natural size.

The White-faced Glossy Ibis was not obtained by the Naturalists of the Princeton Expeditions. A series of six individuals of the species collected at points in Argentina by S. Pozzi, together with the series in the British Museum, has furnished a basis for the descriptions given.

"It is a remarkable circumstance that the three birds that possess perhaps the widest range of all the species belonging to the fauna of Buenos Aires should have been uncommonly abundant this autumn. These birds are the *Himantopus nigricollis*, a native of both Americas; the *Otus brachyotus*, called here 'Lechuson,' and known, I believe, in Asia and Europe as well as in America; and the Glossy Ibis (*Ibis falcinellus*), a bird possessing a still wider range. The Black-necked *Himantopus*, though almost unfailingly found wherever much water occurs on the pampas, is not a numerous species; but at present they are extremely abundant, and quite familiar even in cultivated fields near the farmhouses, flocks of them being seen wherever little pools of water have been formed by the rains. At some future time I will communicate all I have learned from personal observation respecting its habits. Whether the habits of a species (like this bird)

distributed over an entire continent become modified by circumstances in the widely separated regions they frequent, or not, must be an interesting subject of inquiry to naturalists.

“The Glossy Ibis is very common all over the State of Buenos Aires. They appear in spring; but as their movements are very irregular, and many individuals remain through the winter, their migrations are probably not altogether dependent on atmospheric changes. They have a graceful flight; and when migrating, the flocks are seen to succeed each other in rapid succession, each flock being usually composed of from fifty to a hundred individuals, but sometimes of a much greater number. A body of these birds on the wing is a most interesting sight—now soaring high in the air, displaying the deep chestnut hue of their breasts, now descending with a graceful curve towards the earth, as if to exhibit the beautiful metallic green of their upper plumage. The flock is in the meantime continually changing its form or disposition, as if at the command of a leader. One moment it spreads out in a long straight line; suddenly the birds scatter in disorder, or throw themselves together like a cloud of Blackbirds; as suddenly they again re-form and proceed in the figure of a phalanx, half-moon, or triangle. The fanciful notion will scarcely fail to suggest itself to the beholder’s mind that the birds go through these unnecessary evolutions intelligently to attain greater proficiency in them by practice, or merely to make a display of their aerial accomplishments. The Ibis has another remarkable habit while flying; it is not, however, a habit exclusively confined to this species. The flock is sometimes seen as if seized with sudden frenzy or panic, every bird rushing wildly away from its fellows, and descending with a violent zigzag flight; in a few moments the mad fit leaves them, they rise again, reassemble in the air, and resume their journey.

“I should like to know if anything has been recorded concerning the nidification of this bird. Having the four quarters of the globe for a habitat, perhaps it is in no country more common than in this; yet its only breeding-place here that I have yet heard of is the Gualicho, a marshy district about 170 miles south of Buenos Aires city. I have not visited this place in the breeding-season, but I have been told by people living in its vicinity that the Ibises breed there in great numbers, and make their nests close together. The nest is made of dry grass on the ground; the eggs are blue, and three in number. Baird, in his ‘Synopsis of North-

American Birds,' says nothing is known of its nidification ; but this may refer to the bird only in America. I hope from my own observation to find out something more of its breeding-habits in this country." (Hudson, P. Z. S. 1870, pp. 799-800.)

Family PLATALEIDÆ.

Sharpe, Cat. Bds. Brit. Mus. XXVI. p. 43 (1898); id. Hand-List Bds. 1, p. 188 (1899).

AJAJA Reichenbach.

Type.

Ajaja, Reichenb. Av. Syst. Nat. p. xvi. (1852); Sharpe, Cat. Bds. Brit. Mus. XXVI. p. 52 (1898); id. Hand-List Bds. 1, p. 189 (1899) *A. ajaja*.
Mystrorhamphus, Heine, in Heine & Reichen. Nomencl. Mus. Hein. p. 313 (1890) *A. ajaja*.

Geographical Range. — Warmer and south temperate portions of North and South America.

AJAJA AJAJA (Linnæus).

Platalea ajaja, Linn. Syst. Nat. I. p. 140 (1758); Gray, Gen. B. III. p. 559 (1847); Hartl. Ind. Azara, p. 22 (1847); Des Murs in Gay's Hist. Chil. Zool. I. p. 414 (1847); Hartl. Naum. 1853, p. 222 (Valdivia); Abbott, Ibis, 1861, p. 157 (Kidney Cove, Falkland Isl.); Burm. La Plata Reis. II. p. 511 (1861); Scl. & Salv. P. Z. S. 1868, p. 145 (Conchitas); Gray, Handl. B. III. p. 37, no. 10205 (1871); Scl. & Salv. Nomencl. Av. Neotr. p. 127 (1873); Huds. P. Z. S. 1876, p. 15 (Buenos Aires); Durnf. Ibis, 1877, p. 190 (Baradero, Apul, winter visitor); Gibson, Ibis, 1880, p. 156 (Cape San Antonio, summer visitor); Barrows, Auk, I. p. 272 (1884: Bahia Blanca, Feb.); Berl. J. f. O. 1887, p. 33 (Pilcomayo); Oust. Miss. Scient. Cap Horn, p. 300 (1891).

La Spatule couleur de rosé, Briss. Orn. V. p. 356, pl. xxx (1760).

La Spatule rouge, Briss. tom. cit. p. 359.

La Spatule couleur de rose de Cayenne, D'Aubent. Pl. Enl. VIII. pl. 165, (1781).

Roseate Spoonbill, Lath. Gen. Syn. III. pt. i, p. 16, pl. 73 (1783).

Espatula, Azara, Apunt. III. p. 128 (1805).

Platea mexicana, Gamb. Journ. Philad. Acad. I. p. 222 (1849).

Ajaja ajaja, Reichenb. Syst. Av. p. xvi (1852); Sharpe, Cat. B. Brit. Mus. XXVI. p. 52 (1898); id. Hand-list, B. I. p. 189 (1899); Martens, Vög. Hamb. Magalh. Sammelr. p. 21 (1900); Oates, Cat. Birds' Eggs Brit. Mus. II. p. 104 (1902).

Platalea ayaya, Licht. Nomencl. Av. Mus. Berol. p. 90 (1854).

Platalea aja, Gundl. Orn. Cuba, p. 160 (1876).

Platalea rosea, Reichen. J. f. O. 1877, p. 157.

Ajaja rosea Ridgw. Proc. U. S. Nat. Mus. III. p. 10 (1880); Scl. & Huds. Argent. Orn. II. p. 114 (1889); Holland, Ibis, 1890, p. 425 (Buenos Aires); Graham Kerr, Ibis, 1891, p. 270, 1892, p. 145, Rio Pilcomayo, frequently met with; Holland, *t. c.* p. 205 (Estancia Espartilla, breeds late in Nov.); James, New List. Chil. B. p. 8 (1892); Carabajal, La Patagonia, Part II. p. 272 (1900); Albert, Estud. Av. Chil. II. p. 438 (1901).

Mystrohamphus ajaja, Heine in Hein. & Reichen. Nomencl. Mus. Hein. p. 313 (1890: Chili).

GENERAL DESCRIPTION.

Size.—Adult male. (P. U. O. C. 8656. Ensenada, Argentine Republic, July 1896, S. Pozzi.) Total length, 34.0 inches.

Wing, 15.0.

Culmen, 7.0.

Tail, 3.8.

Tarsus, 4.3.

The adult female is appreciably smaller than the adult male.

Color.—Adult male breeding. General color white, becoming rosy and even inclining to crimson on the bend of the wing and on the upper and lower tail-coverts.

Head: Unfeathered to well on the neck. See cut.

Colors of naked skin of head and face: Pale yellowish with a shading of light green, becoming orange about the eye.

Neck: The part of the neck just back of head and the upper throat and chin unfeathered. The rest of neck pure dead white. A tuft of rosy feathers on the neck just above the breast. A few crimson carmine plumes on the back of the neck.

Back: Mantle white, with a decided rosy tinge. Lower back and rump, pale rose color; the upper back deeper rose, each feather terminating in a broad area of deep rose or carmine approaching crimson in tone.

FIG. 183.



Ajaja ajaja. 8656. Male. Princeton University Collection. About $\frac{1}{3}$ natural size.

Tail: Rectrices with deep rose shafts, the outer webs clearly saffron, this color shading on the inner webs to pink on their inner margins.

FIG. 184.

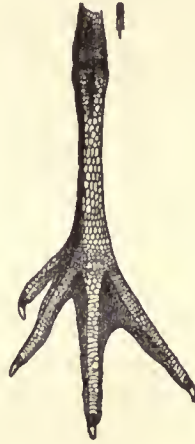


Ajaja ajaja. 8656. Male. Princeton University Collection. $\frac{1}{3}$ natural size.

Wings: Quills rosy, the primaries with deep pink shafts, as have also the secondaries and longer scapulars. The bend of the wing with the feathers silky in character and shading into deep carmine almost crimson in tone.

Lower parts: Upper breast white or nearly white, shading into pink like the remainder of the under surface. The flanks and lower tail-coverts shading into rich carmine of a crimson tone, with the silky character of the feathers of the bend of the wing. Lower wing-coverts and axillaries rosy pink.

FIG. 185.



Ajaja ajaja. 8656. Male. Princeton University Collection. $\frac{1}{3}$ natural size.

Legs and feet pale lake. Iris carmine red. In new breeding plumage the adult male has a rosy tail, lacks the plumes on the neck and the crimson carmine areas are not so pronounced in color.

The *adult female* resembles the adult male in both phases of color, but is smaller in size.

Immature birds, are much whiter than adults, with only a slight rosy shading and none of the carmine crimson areas indicated. The tail is almost white and the head fully feathered, except immediately about the eye, see cut 186. The shafts of the quills are dusky and the tips of the primary quill dark snuff brown. Legs and feet brownish yellow. Iris hazel brown.

Birds intermediate in appearance between fully adult and immature are probably those two or three years old, the full plumage being acquired in the fourth annual full moult.

Geographical Range. — North and South America. In North America north to northern Florida, the Gulf States; in the interior casually to Illinois, and Southern California and the Pacific Coast (not recorded recently from the latter regions). Tropical America southward to northern Patagonia. Casual in the Falkland Islands.

FIG. 186.



FIG. 187.



Ajaja ajaja. 8652. Female, immature. Princeton University Collection. About $\frac{1}{3}$ natural size.

The Roseate Spoonbill was not observed by the naturalists of the Princeton Expeditions, but there are numerous records from the extreme northern portion of that region.

The descriptions are based on the large series of these birds in the British Museum, material collected in Florida and a series of ten birds, in full below, from Argentina.

Con.	P. U. O. C. No.	Sex.	Locality.	Date.	Collector.
Skin	8647	♀ <i>im</i>	Ensenada, Argentina	March, 1895	S. Pozzi.
Skin	8648	♂ 2 yrs	Ensenada, Argentina	August, 1896	S. Pozzi.
Skin	8649	♂ <i>ad</i>	Ensenada, Argentina	July, 1896	S. Pozzi.
Skin	8650	♀ <i>y.o.y.</i>	Ensenada, Argentina	August, 1897	S. Pozzi.
Skin	8651	♂ <i>ad</i>	Ensenada, Argentina	July, 1896	S. Pozzi.
Skin	8652	♀ <i>y.o.y.</i>	Ensenada, Argentina	August, 1897	S. Pozzi.
Skin	8655	♀ <i>y.o.y.</i>	Ensenada, Argentina	August, 1896	S. Pozzi.
Skin	8656	♂ <i>ad</i>	Ensenada, Argentina	July, 1896	S. Pozzi.
Skin	8819	♂ <i>ad</i>	Province Buenos Aires, Argentina.	October, 1898	Museo de La Plata.

The breeding habits of the Roseate Spoonbill have been dwelt on by the earlier writers on American ornithology with much detail. The birds breed in colonies, but are frequently associated with other wading marsh birds, such as herons and their allies. The nests are built sometimes on

grass tussocks in swamps, but oftener in low bushes, the structures being much like the nest of the smaller herons, platforms of sticks and twigs. At all seasons the birds are gregarious and it was no uncommon sight in Florida as late as 1875 to see companies of five hundred of these truly magnificent birds associated together on some favorite feeding ground, or going to spend the night in a mangrove rookery. They were tame and unsuspicious and fell a ready prey to the plume hunters, who have practically exterminated them from the region in question.

Suborder CICONIÆ.

Sharpe, Classif. Bds. 75 (1891); id. Hand-List Bds. I. p. 189 (1899).

Family CICONIIDÆ.

Sharpe, Cat. Bds. Brit. Mus. XXVI. p. 291 (1898); id. Hand-List Bds. I. p. 188 (1899).

Subfamily TANTALINÆ.

Sharpe, Cat. Bds. Brit. Mus. XXVI. p. 321 (1898); id. Hand-List I. p. 189 (1899).

Genus TANTALUS Linnæus.

Type.

- Tantalus*, Linn. Syst. Nat. I. p. 240 (1766); Sharpe, Cat. Bds. Brit. Mus. XXVI. p. 321 (1898); id. Hand-List Bds. I. p. 189 (1899) *T. loculator*.
Tantalides, Reichenb. Av. Syst. Nat. p. xiv (1852-53) . . . *T. loculator*.
Tantalops, Coues, Key to N. Amer. Bds. 2d ed. p. 653 (1884) *T. loculator*.

Geographical Range. — North and South America.

TANTALUS LOCULATOR Linnæus.

Tantalus loculator Wood, Pelecan, Catesby, Nat. Hist. Carol. I. p. 81, pl. 81 (1730); Linn. Syst. Nat. I. p. 140 (1758); Hartl. Ind. Azara, p. 22 (1847); Burm. La Plata Reis. II. p. 510 (1861: Rio Paraná); Barrows, Auk, I. p. 272 (1884: Entrerios); Scl. & Huds. Argent.

Orn. II. p. 108 (1889); Graham Kerr, Ibis, 1892, p. 145 (Pilcomayo); Alpin, Ibis, 1894, p. 199 (Arroyo Grande, Uruguay, breeding); Sharpe, Cat. B. Brit. Mus. XXVI. p. 321 (1898); id. Hand-list B. I. p. 189 (1899); Carabajal, La Patagonia, Part II. p. 272 (1900); Hellmayr, Abh. Akad. Wiss. Muenchen, XXII. p. 710 (1906.)

Le Grande Courly d'Amérique, Briss. Orn. V. p. 335 (1760).

Le Curicaca de Cayenne, D'Aubent. Pl. Enl. VIII. p. 868 (1780).

Wood Ibis, Lath. Gen. Syn. III. pt. i. p. 104 (1785).

Cangui, Azara, Apunt. II. p. 122 (1805).

Ibis nandapoa, Vieill. N. Dict. d'Hist. Nat. XVI. p. 20 (1817).

Tantalus plumicollis, Spix. Av. Bras. II. pl. LXXXV (1824).

Plegadis falcinellus, Gibson (nec Linn.), Ibis, 1880, p. 155.

Tantalops loculator, Coues, Key N. Amer. B. 2d ed. p. 653 (1884).

GENERAL DESCRIPTION.

Size.—Adult female. (P. U. O. C. 5309. Panasoffkee Lake, Florida, 28 January, 1876. W. E. D. Scott.)

FIG. 188.



FIG. 189.



Tantalus loculator. Adult male. Showing unfeathered parts of head and neck. About $\frac{1}{2}$ natural size.

Tantalus loculator. Adult male. Head and bill from front. About $\frac{1}{2}$ natural size.

Total length, about 43.0 inches.

Wing, 19.5.

Culmen, 8.7.

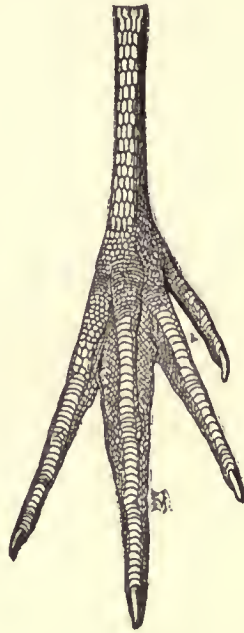
Tail, 6.0.

Tarsus, 8.3.

The sexes do not appear to differ in size, but there is a marked individual variation in this particular.

Color.—Adult male. The general color is white, sometimes showing in freshly killed examples a rosy or salmon buff tone. The quills and tail black, with dark metallic green and bronzy reflections.

FIG. 190.



Tantalus loculator. Adult male. Detail of foot. $\frac{1}{3}$ natural size.

Head : Entirely unfeathered. Dark bluish lead color, becoming yellow on the forehead ; scaled. See cut 188.

Neck : Unfeathered except for the third nearest the body, which is feathered all round with white.

Back : White, including upper tail-coverts.

Tail : Rectrices black, with dark bronzy green, or deep metallic purple reflections.

Wings : White. The bastard wing, primary-coverts and quills black, with dark bronzy green gloss or reflection. Inner secondaries white.

Under parts : Except for the unfeathered portion of neck, wholly white, showing frequently in freshly killed birds a rose or salmon buff blush on the breast.

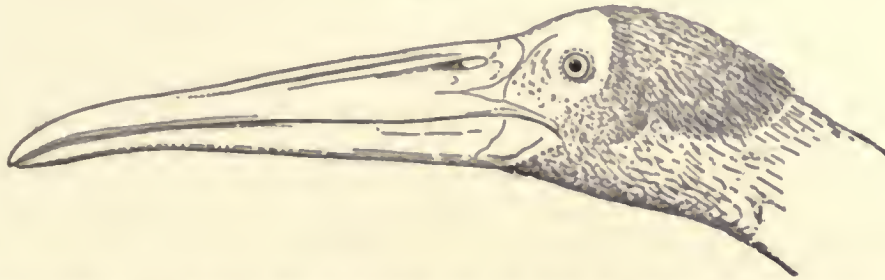
Bill : Yellowish horn color.

Legs and feet : Lead color, with a bluish tone.

Iris : Deep hazel brown.

Young or immature birds differ from adults in being of a general grey tone, not pure white, and in having the *neck* and *head* wholly feathered,

FIG. 191.



Tantalus loculator. Showing the feathering on the head and neck of an immature bird. $\frac{1}{3}$ natural size.

FIG. 192.



Tantalus loculator. Showing the unfeathered forehead of an immature bird. $\frac{1}{3}$ natural size.

as far as the forehead, with a scant, coarse, downy, wool-like, grey plumage. The feathers are darkest, almost dusky, on the occiput. The rest of the coloring is much as in adults, but the white not so pure. These birds are probably those of the first year, as a second phase is much like this, but the grey only shows on the neck feathers, the rest of the feathering

being much as in adults. *The feathering only covers the neck, the whole head being unfeathered.*

Geographical Range.—All tropical and warm-temperate America; north to Georgia and the Carolinas on the Atlantic coast. In the interior to Ohio, Indiana, Wisconsin, Colorado, Utah and Nevada and to California on the Pacific coast. South in South America to Argentina, at least as far as the southern portion of the Province of Buenos Aires. Casual in northern Patagonia.

The Wood Ibis was not observed by the naturalists of the Princeton Expeditions. The material in the British Museum and in the Princeton University Museum have furnished bases for the descriptions here given.

“Mr. Burgess found this bird breeding on the coast of the lower Arroyo Grande, which flows into the Rio Negro from the north, some years ago. The birds were in a small colony, and the nests were on big tussocks of grass in a marshy place.” (O. V. Alpin, on Birds Uruguay, Ibis, p. 199, 1894.)

Mr. Barrows found the birds abundant on the lower Uruguay in summer. Here he met with them in flocks, and they were very tame and unsuspicious, allowing near approach to them while feeding. “During clear, hot days they were often seen to rise in spirals to an immense height and continue floating in circles for hours.” (Barrows, Auk, I. 1884, p. 272.)

Subfamily CICONIINÆ.

Sharpe, Cat. Bds. Brit. Mus. XXVI. p. 291 (1898); id. Hand-List Bds. I. p. 190 (1899).

Genus EUXENURA Ridgway.

Type.

Euxenura, Ridgw. Bull. U. S. Geol. Surv. IV. p. 249 (1878);

Sharpe, Cat. Bds. Brit. Mus. XXVI. p. 297 (1898);

id. Hand-List Bds. I. p. 190 (1899).

E. maguari.

Geographical Range.—Restricted to South America.

EUXENURA MAGUARI (Gmelin).

La Cigogne d'Amérique, Briss. Orn. V. p. 369 (1760).

Le Maguari, Buff, Hist. Nat. Ois. VII. p. 275 (1780).

American Stork, Lath. Gen. Syn. III. pt. i. p. 50 (1785).

Ardea maguari, Gm. Syst. Nat. I. p. 623 (1788).

Tantalus pillus, Molina, Saggio St. Nat. Chil. p. 323 (1789).

Baguari, Azara, Apunt. III. p. 114 (1805).

Ciconia maguari, Temm. Man. d'Orn. II. p. 563 (1820); Hartl. Ind. Azara p. 22 (1847); id. Naum. 1853, p. 222 (Valdivia); Licht. Nomencl. Av. Mus. Berol. p. 90 (1854 : Montevideo); Burm. J. f. O. 1860, p. 265 (Rio Paraná: Banda Oriental); id. La Plata Reis. II. p. 509 (1861 : Tucuman : Entrerios); Pelz. Reis. Novara. Vög. p. 125 (1865 : Chili); Gray, Handl. B. III. p. 35 no. 10185 (1871); Scl. & Salv. Nomencl. Av. Neotr. p. 126 (1873); Durnf. Ibis, 1876, p. 162 (Buenos Aires), 1877, p. 189 (Punta Lara, Dec.: Baradero, April), 1878, p. 399 (Chupat Valley, Oct.: mouth of Sengel, Nov.); Scl. & Salv. P. Z. S. 1878, p. 633; Gibson, Ibis, 1879, p. 415, 1880, p. 153 (Cape San Antonio, breeds, eggs described); Barrows, Auk, I. p. 271 (1884 : Concepcion, resident); Gibson, Ibis, 1885, p. 282 (Paisandú, Uruguay); Oust. Miss. Scient. Cap Horn, Oiseaux, p. 299 (1891); Hudson, Naturalist in La Plata. p. 62 (1892).

Ciconia jaburu, Spix Av. Bras. II. p. 71 pl. XXXIX (1825).

Ciconia pillus, Fraser, P. Z. S. 1843, p. 116 (Colchagua, Chili); Gray, Gen. B. III. p. 561 (1848).

Ciconia maguaria, Des Murs in Gay's Hist. Chil. Zool. I. p. 415 (1847); Hellmayr, Abh. Akad. Wiss. Muenchen, XXII. p. 711 (1906).

Ciconia dicrura, Reichen. J. f. O. 1877, p. 168.

Euxenura maguari, Ridgw. Bull. U. S. Geol. Surv. IV. p. 249 (1878); Scl. & Huds. Argent. Orn. II. p. 106 (1889); Graham Kerr, Ibis, 1892, p. 145 (lower Pilcomayo, rare); James, New List Chil. B. p. 8 (1892); Reed, Ibis, 1893, p. 596 (Chili, resident); Alpin, Ibis, 1894, p. 199 (Uruguay); Sharpe, Cat. B. Brit. Mus, XXVI. p. 297 (1898); id. Hand-list B. I. p. 190 (1899); Carabajal, La Patagonia, Part II. p. 272 (1900); Martens, Vög. Hamb. Magalh. Sammelr. p. 21 (1900 : South Patagonia); Albert Cont. Estud. Av. Chil. II. p. 423 (1901); Oates, Cat. Birds' Eggs Brit. Mus. II. p. 106 (1902).

GENERAL DESCRIPTION.

Size. — Adult male. (P. U. O. C. 8697, La Plata, Argentina, April 1898. S. Pozzi.)

Total length, about 49.0 inches.

Wing, 23.0.

Culmen, 9.5.

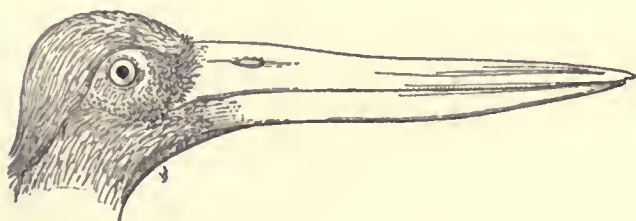
Tail, 9.2.

Tarsus, 10.5.

While there is a considerable range in the size of individuals, this factor does not seem to be correlated with sex.

Color.—Adult male (cited). General color white, with black regions on the wings and tail.

FIG. 193.



Euxenura maguari. 8697 Princeton University Collection. Adult male. Showing the bare skin with the papillæ in front and below the eye. About $\frac{1}{3}$ natural size.

FIG. 194.



Euxenura maguari. 8697 Princeton University Collection. Adult male. Showing the feathering on the forehead extending to base of bill. About $\frac{1}{3}$ natural size.

Head: White. A large unfeathered area about the eye, deep pink or red in life and dotted thickly with warty looking papillæ; see Fig. 193.

Neck: White. A bare gular area. The feathers over the crop are long and having dissociated webs, have a tassel or plume-like appearance.

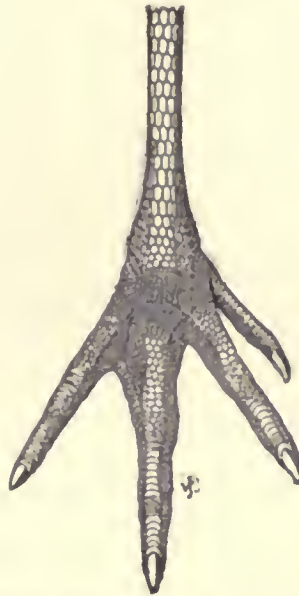
Back: White, including the upper tail-coverts.

Tail: Rectrices black, glossed with dark bronzy, green and deep purple. The tail is deeply forked and the under tail-coverts, which are white, exceed slightly in length the longest rectrices. These under tail-coverts are so developed as to appear like true rectrices; see Fig. 195.

FIG. 195.



FIG. 196.



Euxenura maguari. 8697 Princeton University Collection. Adult male. Showing the forked tail and the stiff under tail-coverts. $\frac{1}{3}$ natural size.

Euxenura maguari. 8697 Princeton University Collection. Adult male. Showing details of foot. $\frac{1}{3}$ natural size.

Wings: White except the greater series of coverts, the scapulars, bastard-wing, primary-coverts and quills, all of which are glossed with bronzy green and deep purple.

Lower parts: White, including the under tail-coverts, axillaries and under wing-coverts.

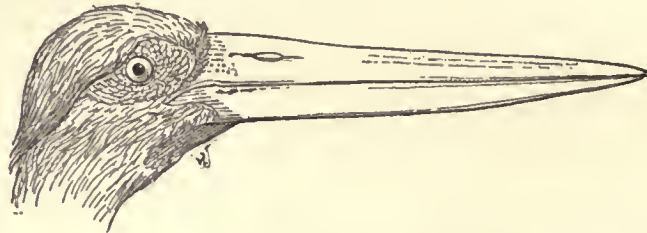
The sexes are alike in color.

Young birds, when full grown, are much like adults. The under wing-coverts are dusky, as are the marginal coverts. The bare skin about the eye is not so highly colored and there are none of the warty papillæ that characterize this region in old birds. (Male P. U. O. C. 8820. Province of Buenos Aires, Argentina, October, 1896. Museo La Plata Coll.)

Geographical Range. — South America, from British Guiana to Chili and Patagonia.

The naturalists of the Princeton Expeditions observed these birds in the northern part of southern Patagonia, but did not secure representatives. The two specimens in the Princeton Museum are cited in detail below. These and the birds in the British Museum are the material for the descriptive diagnoses presented.

FIG. 197.



Euxenura maguari. 8820 Princeton University Collection. Immature male. Showing the bare skin of the face, lacking the papillæ of the adult bird. $\frac{1}{3}$ natural size.

FIG. 198.



Euxenura maguari. 8820 Princeton University Collection. Immature male. Showing the feathering of the head in front and the absence of papillæ about the eyes. $\frac{1}{3}$ natural size.

	P. U. O. C.	Sex.	Locality.	Date.	Collector.
Skin	8697	male <i>ad</i>	La Plata, Argentina	April, 1898	S. Pozzi
Skin	8820	male <i>im</i>	Provincce Buenos Aires, Argentina	October, 1896	Museo La Plata

"The locust visited our part of the country in November, arriving on the 23d. A day or two after some Storks arrived, but only three or four. I saw one at Sta. Ana on the 29th. Riding from Porongos on the 22d December, I saw two and another on the wing. About the middle of March I again saw one at Sta. Elena, and on various occasions in that month, April, and May I met with them. When the bird is on the wing the neck is outstretched and deflected. On rising, this Stork puts its head down very low and takes two or three long bounding hops before it gets on the wing. Legs and feet blood-red; bill lead-grey." (O. V. Alpin, on Birds Uruguay, Ibis, p. 199, 1894.)

Suborder ARDEÆ.

Sharpe, Classif. Bds. p. 75 (1891); id. Hand-list Bds. I. p. 193 (1899).

Family ARDEIDÆ.

Sharpe, Cat. Bds. Brit. Mus. XXVI. p. 56 (1898); id. Hand-List I. p. 193 (1899).

Genus ARDEA Linnæus.

Type.

<i>Ardea</i> , Linn. Syst. Nat. I. p. 283 (1766); Sharpe, Cat. Bds. Brit. Mus. XXVI. p. 66 (1898); id. Hand-List I. p. 194 (1899)		<i>A. cinerea</i> .
<i>Typhon</i> , Reichnb. Av. Syst. Nat. p. xvi (1852)		<i>A. sumatrana</i> .
<i>Ardeomega</i> , Bonap. Consp. II. p. 109 (1855).		<i>A. goliath</i> .
<i>Audubonia</i> , Bonap. Consp. II. p. 113 (1855).		<i>A. occidentalis</i> .
<i>Megerodias</i> , Heine, J. f. O. 1860, p. 200		<i>A. goliath</i> .

Geographical Range. — Nearly cosmopolitan.

ARDEA COCOI Linnæus.

The Blew Heron, Albin Nat. Hist. B. III. p. 74, pl. 79 (1740).

Le Héron hupé de Cayenne, Briss. Orn. V. p. 400 (1760).

Ardea cocoi, Linn. Syst. Nat. I. p. 237 (1766); Gray, List B. Brit. Mus. Part III. p. 76 (1844 : Bay of St. Joseph, Patagonia : Str. Magellan); id. Gen. B. III. p. 555 (1847); Hartl. Ind. Azara, p. 22 (1847); Des

Murs in Gay's Hist. Chil. Zool. I. p. 409 (1847); Hartl. Naum. 1853, p. 222 (Valdivia); Bp. Cons. Av. II. p. 110 (1855: Montevideo); Burm. J. f. O. 1860, p. 264 (Paraná: Cordova); id. La Plata Reis. II. p. 508 (1861: Tucuman); Schl. Mus. Pays Bays Ardeæ, p. 6 (1863); Scl. P. Z. S. 1867, p. 339 (Chili); Scl. & Salv. P. Z. S. 1869, p. 634 (Conchitas); Gray, Handl. B. III. p. 27, no. 10103 (1871); Scl. & Salv. Nomencl. Av. Neotr. p. 125 (1873); Huds. P. Z. S. 1875, p. 625 (Buenos Aires); Durnf. Ibis, 1877, p. 189 (Buenos Aires, resident); Forbes, P. Z. S. 1877, p. 307: Durnf. Ibis, 1878, p. 339 (Sengel and Sengelen rivers, Chupat Valley); Gibson, Ibis, 1880, p. 158 (Cape San Antonio, resident); Doering, Expl. al Rio Negro, Zool. p. 52 (1881-82: Rios Colorado & Negro); White, P. Z. S. 1882, p. 41 (Cordova, not common); Barrows, Auk, I. p. 271 (1884: lower Uruguay); Scl. & Huds. Argent. Orn. II. p. 93 (1889); Withington, Ibis, 1888, p. 470 (Lomas de Zamora); Burm. An. Mus. Nac. Buenos Aires, III. part X. p. 247 (1890: central & northern Patagonia); Holland, Ibis, 1890, p. 425 (Buenos Aires); Oust. Miss. Scient. Cap Horn, Oiseaux, p. 298 (1891); Graham Kerr, Ibis, 1892, p. 144 (Rios Paraná, Paraguay, Bermejo & Pilcomayo); James, New List Chil. B. p. 8 (1892); Holland, Ibis, 1892, p. 204 (Estancia Espartilla, fairly common); Lane, Ibis, 1897, p. 188 (Valdivia: Rio Bueno: Pilmaiguen: Laguna Llanquehui, winter); Sharpe, Cat. B. Brit. Mus. XXVI. p. 73 (1898); Schallow, Zool. Jahrb. Suppl. IV. p. 680 (1898: Sotaki, Coquimbo); Sharpe, Hand-list B. I. p. (1899); Albert. Contr. Estud. Aves Chil. I. p. 287 (1899); Carabajal, La Patagonia, part II. p. 272 (1900); Martens, Vög. Hamb. Magalh. Sammelr. p. 21 (1900); Oates, Cat. Birds' Eggs Brit. Mus. II. p. 113 (1902); Hellmayr, Abh. Akad. Wiss. Muenchen, XXII. p. 711 (1906).

Le Soco, Buff. Hist. Nat. Ois. VII. p. 379 (1780).

Cocoi Heron, Lath. Gen. Syn. iii. pt. i. p. 98 (1785).

Garza aplomada, Azara, Apunt. III. p. 148 (1805).

Ardea fuscicollis, Vieill. N. Dict. d'Hist. Nat. XIV. p. 410 (1817: Paraguay).

Ardea cærulescens, Vieill. tom. cit. p. 413 (ex Azara).

Ardea soco, Vieill. tom. cit. p. 423; Licht. Nomencl. Av. Mus. Berol. p. 89 (1854: Montevideo).

Ardea plumbea, Merem in Ersch. u Grub. Encycl. V. p. 177 (1820).

Ardea maguari (nec Gm.), Spix, Av. Bras. tab XC (1824).

Ardea major, Fraser, P. Z. S. 1843, p. 116 (Southern Chili).

GENERAL DESCRIPTION.

Size.—Adult male. (P. U. O. C. 8638, La Plata, Argentina, July 1896, S. Pozzi).

Total length, about 37.0 inches.

Wing, 18.7.

Culmen, 6.0.

Tail, 7.2.

Tarsus, 7.3.

The adult female is larger than the adult male.

Total length, about 40.0 inches.

Wing, 18.6.

Culmen, 5.9.

Tail, 7.3.

Tarsus, 7.2.

Color.—Adult male (cited). General color slaty bluish above, a white neck, black crown and areas of black on the sides.

Head: Forehead, crown, occiput and sides of face to *below the eye*, blue black. The feathers on the occiput and posterior portion of sides of head lengthened into a long drooping crest reaching far down on the nape. Lower half of sides of face and head pure dead white.

Neck: White. The feathers of the lower neck greatly elongated and pure dead white, drooping far below the line of the body. The middle of the throat marked with numerous black feathers, together forming a narrow stripe down the throat and reaching to the elongated white plumes. Chin and upper throat pure white.

Back: Mantle slaty blue. The feathers lengthened and, with dissociated webs, presenting a generally filamentous appearance. Lower back lighter bluish grey; rump shading into darker and the upper tail-coverts slaty bluish. The scapulars developed into long pendant plumes, broad at the base, and with the webs somewhat dissociated and becoming narrow and pointed at the ends. These feathers are slaty blue at the base and shade in the narrow pointed part to silvery greyish white.

Tail: Rectrices dark slaty blue, shading into much lighter terminally.

Wings: Upper wing-coverts slaty blue, the outer ones of all the series externally silvery greyish white. Bastard-wing, primary-coverts and quills black, with a smoky tinge. The inner secondaries slaty blue externally and the innermost of these feathers wholly slaty blue like the back. The edge of the wing conspicuously white.

Lower parts: The under neck, as described, white with a median line of black feathers from the throat downward to the much elongated pendant white plumes of the lower neck.

On either side of the breast and chest a patch of blue black extending back along the abdomen. The middle of the breast apparently streaked black and white, the white feathers being edged with black. The mid-

FIG. 199.



Ardea cocoi, adult male. 8638 Princeton University Collection. About $\frac{1}{4}$ natural size. La Plata, Argentina, July, 1896.

FIG. 200.



Ardea cocoi, adult male. 8638 Princeton University Collection. Details of unfeathered part of leg and foot. About $\frac{1}{4}$ natural size.

region of the chest and abdomen, the entire thighs and under tail-coverts white. Sides of the body, axillaries and under wing-coverts pale slaty blue.

Bill: Golden yellow, becoming deeper in color and shaded with horn brown above, at the base

Iris: Pale straw yellow. The bare skin around the eye pale greenish (F. Withington).

Legs and feet: Dark olive brown, shaded with yellow.

The adult female resembles the adult male in color, but the elongated plumes of the several regions are not so strongly developed.

Immature birds are much shaded with brown, the blue black areas all more or less defined in dusky brownish. The effect of the lower parts is striped brownish and white, without the defined black areas. They lack entirely the drooping pendant plumes of adults.

Geographical Range. — The whole of South America to the Straits of Magellan.

The Cocoli Heron was not obtained, though recorded, by the naturalists of the Princeton Expeditions. An individual cited, in the Princeton University Museum and the series of birds of this kind in the British Museum, are the basis for the descriptions furnished. The birds do not appear to be abundant anywhere in Patagonia and are somewhat local in their distribution. They have been noticed as resident and as especially common in the winter, by Barrows in his series of papers cited, in lower Uruguay and it seems probable that in Patagonia these herons are migrants, leaving for the north during the colder months.

"Female. Cosquin, Cordova, Arg. Rep., Sept. 23, 1882.

"Iris amber.

"*Ardea cocoi* is by no means common here, as during my stay of five months I only saw three or four.

"Their usual position was, perched on a tree in early morning and not far from the river." (E. W. White, P. Z. S. 1883, pp. 41-42.)

Genus HERODIAS Boie.

Type.

Herodias, Boie, Isis, 1822, p. 559; Sharpe, Cat. Bds. Brit.

Mus. XXVI. p. 88 (1898); id. Hand-List I. p. 195

(1899) *H. egretta*.

Egretta, Bonap. Oss. Regna Anim. p. 97 (1830) . . . *H. egretta*.

Casmerodius, Gloger, Handb. p. 412 (1842) . . . *H. egretta*.

Geographical Range. — Nearly cosmopolitan.

HERODIAS EGRETTE (Wilson).

Le Héron Blanc (pt.), Briss. Orn. V. p. 428 (1760).

La Grande Aigrette d'Amerique, D'Aubent. Pl. Enl. VIII. pl. 925 (1780).

La Grande Aigrette, Buff. Hist. Nat. Ois. VII. p. 377 (1780).

Great Egret, Lath. Gen. Syn. III. pt. i. p. 89 (1785).

? *Ardea galatea*, Molina, Saggro St. Nat. Chil. p. 205 (1786); Bp. Consp. Av. II. p. 114 (1855: Chili).

? *Ardea ohula*, Gm. Syst. Nat. I. p. 629 (1788: Chili).

Garza grande blanca con manto, Azara, Apunt. III. p. 151 (1805).

Ardea egretta, Wils. Amer. Orn. VII. p. 106, pl. 61, fig. 4 (1813); Gray, Gen. B. III. p. 555 (1847); Hartl. Ind. Azara, p. 22 (1847); Des Murs, in Gay's Hist. Chil. Zool. I. p. 410 (1847); Cunn. Nat. Hist. Str. Magell. p. 345 (1871); Scl. & Salv. Nomencl. Av. Neotr. p. 125 (1873); Durnf. Ibis, 1877, p. 189 (Buenos Aires), 1878, p. 399 (Chupat Valley); Gibson, Ibis, 1879, p. 45, 1880, p. 156 (Cape San Antonio, Buenos Aires, nesting); Doering, Expl. al Rio Negro, Zool. Aves, p. 52 (1881-82); White, P. Z. S. 1882, p. 624 (Punta Lara: Oran, Salta); Barrows, Auk, I. p. 271 (1884: lower Uruguay, abundant resident, as far south as Carhué); Scl. & Huds. Argent. Orn. II. p. 98 (1889); Holland, Ibis, 1890, p. 425; Oust. Miss. Scient. Cap Horn, Oiseaux, p. 298 (1891); Scl. P. Z. S. 1891, p. 135 (Sacaya, Tarapacá); Graham Kerr, Ibis, 1892, p. 124 (Rios Paraná & Pilcomayo, abundant); Holland, *t. c.* p. 204 (Estancia Espartilla, fairly common); James, New List of Chil. B. p. 8 (1892); Lane, Ibis, 1897, p. 188 (Chili, generally); Schalow, Zool. Jahrb. Suppl. IV. p. 680 (1898: Sotaki, Coquimbo, Oct.: Calbuco, Dec.); Albert, Contr. Estud. Aves Chil. I. p. 290 (1899); Oates, Cat. Birds' Eggs Brit. Mus. II. pp. 116-117 (1902).

Ardea leuce, Licht. Verz. Doubl. p. 77 (1823: ex Ill. Mss.); Burm. J. f. O. 1860, p. 265; id. La Plata Reis. II. p. 509 (1861: Banda Oriental); Pelz. Reis. Novara, Vög. p. 118 (1865: Chili); Carabajal, La Patagonia, Part II. p. 272 (1900).

Egretta americana, Swains. Classif. B. II. p. 354 (1837).

Ardea alba, D'Orb. (nec Linn.) in Ramon de la Sagra Hist. Nat. Cuba, Aves, p. 191 (1839).

Egretta leuce, Gould, Voy. Beagle, Birds, p. 128 (1841: Maldonado: Patagonia).

Herodias egretta, Gray, List B. Brit. Mus. Part III. p. 77 (1844: Chili: Patagonia); Sharpe, Cat. B. Brit. Mus. XXVI. p. 95 (1898); id. Hand-list B. I. p. 195 (1899); Martens, Vög. Hamb. Magalh. Sammelr. p. 21 (1900).

Ardea galathea, Hartl. Naum. 1853, p. 222 (Valdivia).

Herodias leuce, Salle, P. Z. S. 1857, p. 236.

Herodias egretta var. *californica*, Baird, Cass. & Lawr. B. N. Amer. p. 666 (1858).

Herodias alba leuce, Ridgw. Bull. Ess. Inst. 1874, p. 171.

GENERAL DESCRIPTION.

Size.—Adult male. (P. U. O. C. 4970; Panasoftkee Lake, Sumpter County, Florida, 4 January, 1876, W. E. D. Scott.)

Total length, 39.5 inches.

Wing, 16.2.

Culmen, 4.7.

Tail, 6.2.

Tarsus, 6.4.

FIG. 201.



Herodias egretta, adult male. 4970 Princeton University Collection. About $\frac{1}{4}$ natural size.

The adult female is smaller than the adult male.

Color.—Adult male (cited). Entirely pure white. A series of long scapular plumes composed of specially developed feathers having dissociated webs, the whole forming together a lace-like train. No head plumes and the feathers of the lower neck broad and soft and *not* lengthened into pendant plumes.

Bill: Rich gold yellow. Black or dusky along the culmen. Bare region about eye, pale emerald green.

Legs and feet: Black.

Iris: Straw color.

Adult female breeding.—Not to be distinguished from the adult male at the same season, except that the average individuals are smaller.

Adults in winter.—Have no ornamental train of plumes, the bare

region about the eye is yellow and the color of the entire bill is not clear as during the nuptial period.

Immature birds. — Much like the adults in winter, but the texture of the feathers is more fluffy, downy and softer. The bill is blackish at the end.

Geographical Range. — America. Temperate North America, the British Provinces and Oregon (it being of casual occurrence so far north) and resident in the South Atlantic and Gulf States.

Thence southward through tropical and South America it is resident as far south at least as Argentina and Chili and of frequent occurrence (as a nomadic migrant) in Patagonia.

The American Egret was not obtained by the naturalists of the Princeton Expeditions. Two individuals from La Plata and the large series in the Princeton University Museum as well as the material in the British Museum, have been utilized in making the diagnoses here given.

This is an abundant bird locally in most parts of Patagonia during the warmer portions of the year; in the southern portion of the region the birds are migratory, but on the Rio Negro and in the northern part of Patagonia they appear to be present throughout the year.

These herons breed in communities of varying size, from a few pairs to many thousand birds, and are often associated with other closely allied birds of their own family, as well as with ibises and spoonbills. The rookeries are in low, densely wooded thickets of willow, and similar growths, on or close to water, fresh or brackish seemingly preferred. Several nests are frequently placed in the same tree or bush and it seems probable that communal care of the young prevails, that is, after the birds are hatched and especially as soon as the fledglings begin to climb about in the trees and bushes, which they do long before they are able to fly.

Genus FLORIDA Baird.

Type.

Florida, Baird, Survey for Pacific R. R. Vol. IX. part II. p.

671 (1858); Sharpe, Cat. Bds. Brit. Mus. XXVI. p. 100

(1898); id. Hand-List I. p. 195 (1899) *F. cærulea*.

Glaucerosdius, Heine and Reichenow Nomencl. Mus. Hein.

p. 307 (1890) *F. cærulea*.

Geographical Distribution. — Tropical America. Extending to northern South America, and casually to Patagonia. The West Indies. Warmer

portions of North America, north to Massachusetts, Illinois and Kansas. Not occurring in the western United States.

FLORIDA CÆRULEA (Linnæus).

Ardea cærulea, Linn. Syst. Nat. I. p. 143 (1758); Burm. La Plata Reis, II. p. 509 (1861); C. Burm. An. Mus. Nac. Buenos Aires, III. part X. p. 247 (1888: northern Patagonia); Scl. & Huds. Argent. Orn. II. p. 99 (1889); Carbajal, La Patagonia, part II. p. 272 (1900).

Florida cærulea, Sharpe, Cat. B. Brit. Mus. XXVI. p. 100 (1898); id. Hand-list B. I. p. 195 (1899); Oates, Cat. Birds' Eggs Brit. Mus. II. p. 117 (1902).

GENERAL DESCRIPTION.

Size. — Adult male. (P. U. O. C. 4060, Panasoffkee Lake, Florida, 18 March 1876, W. E. D. Scott.)

Total length, 23.0 inches.

Wing, 10.5.

Culmen, 3.2.

Tail, 4.0.

Tarsus, 3.9.

Females, adult, average a little smaller than adult males.

Color. Blue Phase. — Adult male breeding (cited above) head and neck deep plum-color, shaded more or less with slaty blue; the remaining parts deep slaty blue.

Head: Rich deep plum-color, shaded with slaty blue. The feathers fine and hair-like in appearance and produced into a long full occipital crest.

Neck: Rich deep plum-color shaded with slaty blue, and changing in the region near the body to clear slaty blue. The feathers fine and hair-like in general appearance. At the base of the neck, all around, the slaty blue feathers are prolonged into fine plumes which are long and pendant below.

Back: Scapulars and interscapular region, lower back, rump and upper tail-coverts, deep slaty blue. The feathers of the scapular and interscapular region prolonged into plumes of varying length, the longest reaching two or three inches beyond the tail.

Tail: Slaty blue.

Wing: Entirely slaty blue, the feathers of the shoulders inclining to be plume-like in character.

Lower parts : Wholly slaty blue, including the under wing-coverts, the axillaries and under tail-coverts.

Bill : Rich deep blue at base, becoming abruptly black on the terminal part. See Figure 202.

Unfeathered region about the eyes and lores and the eyelids, rich deep blue.

Eyes : Varying in individuals from pale straw-color, to deep lead-color and in some cases to rich hazel brown. Breeding birds in the blue phase

FIG. 202.



Florida cærulea, adult male in blue phase. 4060 Princeton University Collection. About $\frac{1}{3}$ natural size.

of plumage, actually nesting, show all these different phases of eye coloring. The change is apparently correlated with the period of breeding and the birds with deep lead-colored or hazel irides are probably very old individuals. The several colors of irides obtain in either sex.

All birds examined during the season when not breeding, in whatever phase of plumage, have pale straw colored irides.

Legs : Almost or quite black.

Feet : Almost or quite black.

"I was struck during the *early* part of the breeding season, with the coloration about the bill and face in some of the Herons, and not finding descriptions of the same conditions I append the following : *Ardea cærulea* ; In this species, in both plumages, I have, in a very large series at the

three points visited (in Florida) noted the iris is light straw color. But a series of twelve individuals collected at Clearwater, in a little lake where they had just begun to breed, the date being 20th March, 1880, the iris was deep lead color, and in one case brown or hazel. These are the only individuals that I have taken at just this period, viz., at the beginning of the breeding season, but this is apparently the color of the part in question at that season." Scott, Bull. Nutt. Orn. Club, VI. No. 1, Jan. 1881, p. 20.

FIG. 203.



Florida cærulea, adult breeding male, white phase. 4054 Princeton University Collection. About $\frac{1}{3}$ natural size.

White Phase.—Adult male breeding, P. U. O. C. 4054, Lake Butler, Hillsboro County, 23 February, 1880, W. E. D. Scott.

General color *white*. The same plumes that characterize the *blue phase*. A very slight smoky shading on the crown and head plumes, the back of the neck and on the interscapular area. *Bluish showing on the extreme ends of all the primaries*. Otherwise this bird is *pure white*.

Bill: Pale sage green at base, darkening abruptly terminally. *Unfeathered region above the eye and lores*; pale sage green.

P. U. O. C. 5279, Female Immature, Panasoffkee Lake, Sumpter County, Florida, 13 January, 1876, W. E. D. Scott.

Bill: Pale sage green, darker at the end.

Iris: Pale straw color. Region about eye and lores: Pale sage green.

Legs and feet: Pale sage green.

Young birds of the year.—White, showing traces of bluish or smoky in varying degree, usually on the crown, the back of the neck and on the interscapular region. Some specimens show this coloring only on the

crown, but all birds in this plumage *always have the tips of the primaries more or less shaded with blue.*

Late in the first year, before the first breeding season, many of the birds of the year become mottled with many dark slaty blue feathers; this is presumably accomplished by a partial moult and the disposal of the dark color is entirely irregular and uneven on the two sides of the body of the same bird. Often the larger feathers are particolored. Birds in Florida are found on numerous occasions *breeding* in this plumage. P. U. O. C. 405, Breeding Female, Old Tampa Bay, Florida, 4 February, 1880. (W. E. D. Scott.)

Bill : Dull sage green, darkening terminally.

Iris : Straw color.

Legs and Feet : Dull sage green.

Region about eyes and lores : Dull sage green.

FIG. 204.



Florida cærulea. Nestling, half grown. 4046 Princeton University Collection. About $\frac{1}{3}$ natural size.

Nestling (half grown, almost fully feathered). (P. U. O. C. 4046, Male, mouth of Old Tampa Bay, Florida, 26 May, 1880, James Henry Devereux.)

This bird is pure white throughout, except that the tips of the primaries are marked, or shaded with smoky, brownish blue.

Other young birds about the same age are similar, but some have a shading of blue on the crown and a few have traces of shading of a similar color on the interscapular region. The amount of bluish on the tips of the primaries varies much, *but is always present*, not only in the young, but *in all* examples of the white phase of plumage of this heron, and readily distinguishes it from any other small white heron found in America.

The bill in nestlings is dull greenish, the iris pale straw color, and the feet and legs dull sage green.

In the many hundreds of nests of this heron that I have examined in various parts of Florida, containing fledglings, I have seen only white young birds as described, and I believe that *all the young of Florida cærulea* are white and remain so until at least the first complete moult. Most birds then assume the slaty blue plumage, some are pied blue and white, and a few remain almost wholly white throughout their lives. (W. E. D. S.)

Geographical Range. — As given for the genus. Burmeister¹ speaks of its having occurred on the Rio Negro, northern Patagonia. The only claim the Little Blue Heron has as an element in the Patagonian Avifauna is this record.

Perhaps more common about fresh water than on the salt lagoons. The Little Blue Heron breeds in the characteristic heron manner, generally in trees from fifteen to forty feet from the ground. Usually the rookeries are composed of from twenty to forty pairs of the birds and frequently a much larger number are associated together, several hundred pairs being not uncommon. Many nests are often placed in the same tree close together. From two to six eggs are laid, and two broods are usually reared by each pair of the birds. The breeding season is a prolonged one.

Genus NYCTICORAX T. Forster.

Type.

- Nycticorax*, T. Forster, Synop. Catal. Brit. Birds, p. 59
 (1817); Sharpe, Cat. Bds. Brit. Mus. XXVI. p. 145
 (1898); id. Hand-List Bds. I. p. 198 (1899) . *N. nycticorax*.
Nycticardea, Swains. Classif. Bds. II. p. 354 (1837) . *N. nycticorax*.
Scotæus, Keys. & Blas. Wirb. Eur. pp. lxxx, 220 (1840) . *N. nycticorax*.
Nycterodius, Magill, Man. Brit. Orn. II. p. 126 (1842) . *N. nycticorax*.

Geographical Range. — Nearly cosmopolitan, ranging far south, but not very far north.

NYCTICORAX TAYAZU-GUIRA (Vieillot).

- Garza parda chorreada*, Azara, Apunt. III. p. 168 (1805: ♀).
Garza tayazu-guira, Azara, Apunt. III. p. 173 (1805: ♂).

¹ C. Burmeister, An. Mus. Nacion. Buenos Aires, III. part X. p. 247, 1888.

- Ardea tayazu-guira*, Vieill. N. Dict. d'Hist. Nat. XIV. p. 437 (1817: ex Azara ♂).
- Ardea maculata* (nec Gm.), Vieill. Enc. Meth. III. p. 1129 (1823: ex Azara ♀).
- Nycticorax gardeni* (pt.) Gray, List B. Brit. Mus. Part III. p. 85 (1844: Falkland Islands: Str. Magellan).
- Nycticorax americana*, Tsch. & Cab. (nec Bonap.) in Faun. Peru, Orn. pp. 50, 297 (1845-46); Hartl. Ind. Azara, pp. 22, 23 (1847); Gould, P. Z. S. 1859, p. 96 (Falkland Islands).
- Nycticorax nævius* Gray (nec Bodd.), Gen. B. III. p. 558, pt. (1847); Des Murs in Gay's Hist. Chil. Zool. I. p. 412 (1847); Leybold, Excurs. Pampas Argentinas, p. 62 (1873); Philippi, Orn. IV. p. 159 (1888: Empexa, Tarapacá).
- Nycticorax obscurus*, Bp. (nec Licht.), Consp. Av. II. p. 141 pt. (1855: Patagonia: Falkland Islands); Scl. Ibis, 1861, p. 312 (Falkland Islands); id. P. Z. S. 1864, p. 73 (Falkland Islands); id. & Salv. Ibis, 1869, p. 284 (Tyssen Isl., Falkland Isl.); Durnf. Ibis, 1877, p. 40 (Chupat Valley), p. 189 (Buenos Aires, resident), 1878, p. 63 (Buenos Aires, Nov. Dec.), p. 399 (Sengel); Scl. & Salv. P. Z. S. 1878, p. 436 (Falkland Islands); Scl. P. Z. S. 1879, p. 310 (eggs); Gibson, Ibis, 1880, pp. 156, 158 (Cape San Antonio, Buenos Aires, resident & breeds); Scl. & Salv. Voy. Chall. II. Birds, p. 106 pt. (1880); White, P. Z. S. 1882, p. 624 (Pacheco, Buenos Aires; Sauce Redondo, Salta); Withington, Ibis, 1888, p. 471 (Lomas de Zamora); Scl. & Huds. Argent. Orn. II. p. 105 (1889); Holland, Ibis, 1890, p. 425; Scl. P. Z. S. 1891, p. 136 (Sacaya, Tarapacá); Holland, Ibis, 1892, p. 205 (Estancia Espartilla, fairly common Sept. to Jan., breeds); Schalow, Zool. Jahrb. Suppl. IV. p. 679 pt. (1898: Rio de los Patos. S. Patagonia).
- Nycticorax gardeni*, Scl. (nec Gm.), P. Z. S. 1860, p. 386 (Berkeley Sound); Abbott, Ibis, 1861, p. 157 (Falkland Islands); Doering, Expl. al Rio Negro, Zool. Aves, p. 52 (1881-82); Barrows, Auk, I. p. 271 (1884: lower Uruguay, abundant resident); Carabajal, La Patagonia, Part II. p. 272 (1900).
- Ardea gardeni*, Burm. (nec Gm.), J. f. O. 1860, p. 264; id. La Plata Reise, II. p. 508 (1861: Rio Paraná); C. Burm. An. Mus. Nac. Buenos Aires, III. Part X. p. 247 (1888: northern Patagonia).

Nyctiardea obscura Gray (nec Licht.), Handl. B. III. p. 33, no. 10176 pt. (1871).

Nycticorax tayasu-guira, Sharpe, Cat. B. Brit. Mus. XXVI. p. 155 (1898); id. Hand-list B. I. p. 198 (1899); Martens, Vög. Hamb. Magalh. Sammelr. p. 21 (1900); Oates, Cat. Birds' Eggs Brit. Mus. II. p. 124 (1902).

GENERAL DESCRIPTION.

Size.—Adult male. (8823 Princeton University Collection, Province of Buenos Aires, Argentina, July 1896).

Total length, about 26.5 inches.

Wing, 12.4.

Culmen, 3.2.

Tail, 5.3.

Tarsus, 3.2.

There does not appear to be a difference in size according to sex.

Color.—Adult male (cited). Breeding dress. General color grey with a large dorsal area of deep greenish black. A like area on the head. Below delicate grey, shading into pure white on the throat and abdomen.

FIG. 205.



Nycticorax tayasu-guira, adult male. 8823 Princeton University Collection. About $\frac{1}{2}$ natural size.

Head: Forehead and continuous with it a line extending back above the eye, white. Whole top of the head deep greenish black; the feathers lengthened and silky and reaching down on the nape for a short distance. From the occiput a long (10 inches in bird cited) white cord-like plume, which, when separated, is found to be composed of several

(generally three) distinct feathers, which are closely held together by their filaments coalescing. The sides of the face and head are grey, which shades into white as it approaches the throat and chin.

Neck: Light grey above and on the sides shading into lighter, almost white beneath and becoming white on the upper throat and chin.

Back: Interscapular region and upper scapulars dark greenish black, contrasted and defined abruptly by the lower scapulars, which are a sort of ashy grey or dove color. Lower back, rump and upper tail-coverts light ashy grey.

Wings: Ashy grey or dove color throughout.

Lower surface shaded with light grey except on the chin, throat and lower abdomen and vent, where the pale grey shades into pure white.

Bill: "Upper mandible and tip of lower one black, the remainder of lower mandible yellowish green" (H. Durnford).

Feet: "Light pea green, underside with a tinge of yellow" (H. Durnford).

Iris: "Dull crimson" (H. Durnford).

Presumably the colors, not only of the bill and naked skin about the eye, but of the iris itself, change much at the different seasons of the year and with age. At least this is the case with the close ally of this night-heron *Nycticorax nycticorax*.

Adult birds in winter lack the corded plume of the occiput and the grey colors are generally much deeper. All the bare parts about the face, the bill, feet and legs are more subdued in color than in the summer.

Geographical Range. — South America, from Peru and Brazil southward, to Patagonia, Chili and the Falkland Islands. The distribution of the bird in the more southern part of its range seems to coincide with the eastern coast of South America; it appears to be rare or casual on the southern portion of the western coast.

The South American Night Heron was not obtained by the naturalists of the Princeton Expeditions. It has been recorded at many points throughout Patagonia, but there seems to be little doubt that it is casual or rare on the Straits of Magellan and in the adjacent region. About Buenos Aires and in the interior of Patagonia the birds are common; but careful examination fails to disclose satisfactory records of the

species in the extreme southern portion of the province or on the Straits of Magellan. The allied form *N. cyanocephalus* prevails in that part of the country, as will presently be seen, and seems to have been mistaken by observers for the bird now under consideration.

There are four specimens of this bird in the collections of the University Museum at Princeton, all taken in the province of Buenos Aires; these together with the abundant material in the British Museum have formed a basis for the descriptions and generalizations given here.

The habits of this Night Heron as observed and recorded do not seem to differ materially from those of its near ally, *Nycticorax nycticorax*.

Coll.	P. U. O. C.	Sex.	Locality.	Date.	Collector.
Skin	8822	♂ ad.	Province of Buenos Aires, Argentina.	November, 1897.	Museo La Plata.
Skin	8823	♂ ad.	"	January, 1896.	"
Skin	8824	♂ im.	"	July, 1898.	"
Skin	8825	♀ ad.	"	October, 1896.	"

NYCTICORAX CYANOCEPHALUS (Molina).

Ardea cyanocephala, Molina, Saggio St. Nat. Chil. p. 260 (1786); Vieill.

N. Dict. d'Hist. Nat. XIV. p. 411 (1817).

Ardea nycticorax, Kittl. (nec Linn.), Kupf. Vög. pt. 3, p. 26, Taf. 35, fig. 1 (1833: Chili).

Nycticorax americanus, Gould (nec Bonap.), Voy. Beagle, Birds, p. 128 (1841: Valparaiso).

Nycticorax cyanocephalus, Fraser, P. Z. S. 1843, p. 116 (Chili); Sharpe, Cat. B. Brit. Mus. XXVI. p. 156 (1898); id. Hand-list B. I. p. 198 (1899); Martens, Vög. Hamb. Magalh. Sammlr. p. 21 (1900).

Nycticorax gardeni, Gray (nec Gm.), List B. Brit. Mus. Part III. p. 85 pt. (1844); Hartl. Naum. 1853, p. 222 (Valdivia).

Nycticorax nævius, Gray (nec Gm.), Gen. B. III. p. 558 pt. (1847); Des Murs in Gay's Hist. Chil. Zool. I. p. 412 pt. (1847).

Nycticorax obscurus, Licht. Nomencl. Av. Mus. Berol. p. 90 (1854: Chili); Bonap. Cons. Av. II. p. 141 pt. (1855: Chili); Pelz. Reise Novara, Vög. p. 118 (1865: Chili); Scl. P. Z. S. 1867, pp. 334, 339 (Chili); id. & Salv. Ibis, 1868, p. 189 (Oazy Harbour, Str. Magellan); Cunn. Nat. Hist. Str. Magell. pp. 181, 298, 350 (1871:

Chiloe: Str. Magellan); Scl. & Salv. P. Z. S. 1878, p. 436 pt. (Tom Harbour: Puerto Bueno); iid. Voy. Chall. II. Birds, p. 106 pt. (1880: Tom Harbour); Sharpe, P. Z. S. 1881, p. 12 (Cockle Cove); Ridgw. Proc. U. S. Nat. Mus. XII. p. 137 (1889: Port Otway); Oust. Miss. Scient. Cap Horn, Oiseaux, p. 137 (1891); James, New List Chil. B. p. 8 (1892); Lane, Ibis, 1897, p. 188 (central & southern Chili); Schalow, Zool. Jahrb. Suppl. IV. p. 679 pt. (1898: Coquimbo: Tantil Isl., Calbuco); Albert, Contr. Estud. Aves Chil. I. p. 303 (1899); Salvad. Ann. Mus. Genov. (2) XX. p. 626 (1900: Penguin Rookery: Porto Cook: Punta Arenas: Possession Bay).

Ardea obscura, Schl. Mus. Pays Bas, Ardeæ, p. 59 (1863: Str. Magellan).

Nyctiardea obscura, Gray, Handl. B. III. p. 33 no. 10176 (1871).

Nycticorax griseus, Albert (nec Linn.), Contr. Estud. Aves Chil. I. p. 299 (1899).

GENERAL DESCRIPTION.

Size. — Adult male, breeding plumage. (P. U. O. C. 7804. Near headwaters of Rio Chico de Rio Santa Cruz, Patagonia, 28 February 1897, J. B. Hatcher.)

Total length, 27.0 inches.

Wing: 13.3.

Culmen, 3.2.

Tail, 5.2.

Tarsus, 3.5.

The adult females average a little less in size than the adult males.

Color. — Adult male (cited), breeding plumage. The disposal of color in this Night Heron is *in pattern* almost identical with *N. tayazu-guira*, but every part is much darker, and only the chin is white, the rest of the ground color being deep smoky brownish in tone. The dark interscapular area is duller green black, as is the crown area.

Head: Forehead and a line extending back over the eye deep smoky brown, lightest just above the eye. Cap deep black with a tinge of dark bluish green. Pendant occipital plume clear white and corded in appearance; generally of three feathers and about ten inches long. Sides of face and head deep smoky brown.

Neck: Uniform deep smoky brown, shading into dull white on the chin.

Back: Interscapular region and upper scapulars deep black with a dull greenish gloss. Lower back, rump and upper tail-coverts deep smoky brown.

Tail: Deep smoky brown.

Wings: Entirely deep smoky brown, darker than elsewhere and with a dull gloss of oily green on the exposed surfaces of some of the longer feathers.

Lower parts: Uniform smoky brown, becoming isabelline or whitish about the posterior part of the abdomen and about the vent. Lower tail-coverts smoky brown, as are the lower wing surfaces and axillaries.

FIG. 206.



FIG. 207.



Nycticorax cyanocephalus, adult male. 7804
P. U. O. C. Pacific slope of the Cordilleras,
Patagonia.

Nycticorax cyanocephalus. 7804 P. U. O.
C. Details of unfeathered portion of leg and
foot.

Bill: Dull blackish (Hatcher).

Iris: Cherry red (Hatcher).

Iris: "Dull orange" (Peterson).

Feet: Dull greenish yellow (Hatcher).

Naked skin about eye: Dark blue (Hatcher). Dr. Coppinger has spoken of the iris of this heron as "orange" and no doubt winter specimens generally and a few breeding examples have eyes of that color. Herons' eyes in many species at least vary much in color, not only with age, but at different seasons in adult birds.

Adult female breeding.—Similar to the adult breeding male and having the same occipital cord-like plumes.

Adults in winter are like breeding birds in general color, but lack the occipital cord-like plumes, and the bill, feet and naked parts about the eye are duller. The eyes generally have orange or reddish yellow irides.

FIG. 208.



Nycticorax cyanocephalus, immature male. 7968 P. U. O. C. Lake Pueyrredon, Patagonia (Lago Moreno).

Young of the year (P. U. O. C. 7968, male, Lake Pueyrredon, Patagonia, 3 May, 1899, O. A. Peterson) closely resemble the similar age of *N. tayazu-guira*, but are more coarsely spotted with dull isabelline white, and streaked about the top and sides of the head and spotted on the shoulders with dull rusty brown. The ground color is deep smoky brown above, and below the entire surface presents a coarse streaking of dull smoky brown and whitish, in about equal proportions.

Geographical Range.—Southern South America, chiefly western, from Chili to the Straits of Magellan.

The naturalists of the Princeton Expeditions secured two examples of this heron cited in full below; the considerable series in the British Museum has also been examined.

Of its distribution in Patagonia Mr. Hatcher (in MS. notes) writes: "Occasionally seen among rocks in streams at bottoms of deep gorges in the heart of the Southern Andes." Dr. Cunningham evidently refers to this species, as he always speaks of it "as a dark grey brown night heron" under the name of *Nycticorax obscurus*, and (p. 181, *op. cit.*) he goes on to say "I saw only one bird that was new to me—a kind of night heron (*Nycticorax obscurus*), with dusky-brown plumage which I afterward observed at the Falkland Islands, and in many localities in the

western part of the Strait and Western Channels, as well as at Chiloe. It is of a bold disposition, allowing one to approach within a short distance of it, and then making off with a heavy flapping flight, uttering at the same time a very hoarse croak." (The italics are the author's.)

It is probable that all of Dr. Cunningham's notes in the Natural History of the Straits of Magellan refer to this species, which is so different from its congener, and which always impressed him so. He must have seen one individual at least in the Falkland Islands. As noted before, this is the form that occurs in the extreme south of Patagonia, while *N. tayazu-guira* does not range down as far as the Straits, though it occurs in the Falkland Islands. The relationship and distribution of these herons presents an attractive field for further investigation.

Genus BUTORIDES Blyth.

Type.

- Butorides*, Blyth, Cat. B. As. Soc. p. 281 (1849); Sharpe,
Cat. Bds. Brit. Mus. XXVI. p. 172 (1898); id. Hand-
List Bds. I. p. 199 (1899) *B. javanica*.
Ocniscus, Nat., J. f. O. 1856, p. 343 *B. virescens*.

Geographical Range.—North and South America. The Galapagos, Africa, Madagascar. The Indian Peninsula, China, Japan, Burmese countries, Malay Peninsula and Archipelago, Australia and some of the Pacific Islands.

BUTORIDES STRIATA (Linnæus).

- Ardea striata*, Linn. Syst. Nat. I. p. 238 (1766: Surinam); Gm. Syst.
Nat. I. p. 634 (1788); Reichen. J. f. O. 1877, p. 253.
Crabier de Cayenne, D'Aubent, Pl. Enl. VIII. pl. 908.
Le Crabier gris à tête et queue vertes, Buff. Hist. Nat. Ois. VIII. p. 408
(1781).
Cancroma grisea, Bodd. Tabl. Pl. Enl. p. 54 (1783).
Striated Heron. Lath. Gen. Syn. III. pt. I. p. 82 (1785).
Ardea torquata, Shaw in Miller, Cim. Phys. pls. 35, 36 (1796).
Garza cuello aplomado, Azara, Apunt. III. p. 177 (1803).
Ardea cyanura, Vieill. N. Dict. d'Hist. Nat. XIV. p. 421 (1817).
Ardea fuscicollis, Vieill. N. Dict. d'Hist. Nat. XIV. p. 410 (1817).
Ardea scapularis, Licht. Verz. Doubl. p. 77 (1823, ex Illiger); Wagler.

- Syst. Av. p. 189, Ardea, Ep. 35 (1827); Neuwied, Beitr. Naturg. Bras. IV. p. 623 (1833); Hartl. Ind. Azara, p. 23 (1847); Cab. in Schomb. Reis. Guian. III. p. 753 (1848); Burm. Th. Bras. III. p. 411 (1856: Lower Parahyba); Schl. Mus. Pays-Bas, Ardea, p. 42 (1863: Surinam; Caracas); Finsch. P. Z. S. 1870, p. 589 (Trinidad); Pezl. Orn. Bras. p. 301 (1871: Sapitiba; Matto Grosso).
- Egretta scapularis*, Swains, An. in Menag. p. 333 (1837).
- Ardea grisea*, Gray, Gen. Bds. III. p. 556 (1847); Léot. Ois. Trinid. p. 421 (1866); Gray, Hand-List Bds. III. p. 31, no. 10156 (1871).
- Butorides scapularis*, Bonap. Consp. II. p. 128 (1855); Scl. & Salv. P. Z. S. 1866, p. 199 (Ucayali).
- Butorides grisea*, Cass, Pro. Phila. Acad. Nat. Sci. 1860, p. 19 (Cartagena).
- Butorides cyanurus*, Scl. & Salv. P. Z. S. 1868, p. 145 (Conchitas); Wyatt, Ibis, 1871, p. 384 (Lake Paturica); Scl. & Salv. Nomencl. Av. Neotr. p. 125 (1873); Lee, Ibis, 1873, p. 137 (Argentine Rep.); Durnf. Ibis, 1878, p. 62 (Buenos Aires); Scl. & Salv. P. Z. S. 1879, p. 542 (Medellin); Salv. & Godm. Ibis, 1879, p. 206 (Colombia); W. A. Forbes, Ibis, 1881, p. 355 (Recifé, breeding); Tacz. Orn. Pérou, III. p. 397 (1884); Barrows, Auk, I. p. 271 (1884: Concepcion, breeding); Withington, Ibis, 1888, p. 471 (Lomas de Zamora); Scl. & Hudson, Argent. Orn. II. p. 101 (1889); Holland, Ibis, 1892, p. 205; Allen, Bull. Amer. Mus. Nat. Hist. V. p. 150 (1893: Matto Grosso).
- Butorides scapulatus* (lapsu), Scl. & Salv. P. Z. S. 1873, p. 305 (Ucayali R.; Santa Cruz).
- Butorides virescens* (lapsu), Tacz. P. Z. S. 1877, p. 746 (Santa Lucia, Peru).
- Butorides striata*, Baird, Brewer & Ridgw. Water-Birds North America, I. p. 50, note (1884); Berl. & Ihering, Zeitschr. Ges. Orn. II. p. 78 (1885: Taquara); Berl. J. f. O. 1889, p. 318 (Ucayali); Berl. J. f. O. 1892, p. 104; Peters, J. f. O. 1892, p. 120 (Curaçao); Sharpe, Bull. Brit. Orn. Club, III. p. xvii (1894); id. Cat. Bds. Brit. Mus. XVII. p. 175 (1898); id. Hand-List Bds. I. p. 199 (1899); Oates, Cat. Birds' Eggs Brit. Mus. II. p. 126 (1902).
- Ocniscus striatus*, Heine & Reichenow, Nomencl. Mus. Hein. p. 308 (1890).

GENERAL DESCRIPTION.

Size.—Total length, about 15.5 inches.

Wing, 6.7.

Culmen, 2.6.

Tail, 2.5.

Tarsus, 2.0.

The sexes are alike in size.

Color. — General color ashy grey, with dark green cap, back and wings and chestnut striping on lower neck.

Head: Whole top of head blackish, with a dark green gloss, the occipital feathers prolonged and forming a pointed crest. Sides of head and face pale ashy grey, interrupted by a greenish black bar below the eye,

FIG. 209.



Butorides striata. P. U. O. C.

FIG. 210.



Butorides striata. P. U. O. C. Details of unfeathered portion of leg and foot.

extending back to the vicinity of the ear-coverts, the area above it and the crown being slaty grey like the rest of the sides of head and face. Below this bar the sides of the cheeks are lightest, approaching white.

Neck: Light slaty grey on upper part and sides; below, the chin and upper throat are immaculate white. The lower throat and the remainder of under neck whitish, streaked with rich chestnut, which is lightest nearest the body, where the feathers are long and pendant and form a small, short neck plume.

Back: The interscapular region and upper scapulars deep bottle-green, margined and tipped with slaty grey and having dull white shafts. These feathers are lengthened into lanceolate plumes, which extend back at least

as far as the tips of the closed wings. Lower back and rump dark slaty grey, shaded somewhat with greenish and shading into the clear bottle-green of the upper tail-coverts.

Tail: Dull bottle-green, with a slaty cast.

Wings: Upper wing-coverts dark bottle-green, broadly margined with pale rufous or ochraceous. The quills dark bottle-green, narrowly margined on the exposed edges with creamy white or pale buff.

Lower parts: Chin, throat and neck as described. The rest of the lower surface slaty grey, becoming whitish on the abdomen. The under surface of the quills, under wing-coverts, axillaries and under tail-coverts pale slaty grey.

Bill: Upper mandible dusky horn-color. Lower mandible dusky at the edges, shading into greenish yellow at its lower margin and into greenish at base, the bare skin about the eye and the eyelid being grass-green.

Iris: Varying from pale straw to deep reddish orange.

Legs: Green, shading into brownish on the front of the tarsus.

Feet: Green, shading into brownish green on the tops of the toes; the soles of the feet deep yellow.

The adult female is like the adult male.

The winter plumage of adults is but little different from the breeding plumage; a little duller and with the rufous margins of the feathers of the wings and the rufous of the under neck deeper in tone.

Young birds of the year are brown above; no plumes; the upper wing-coverts with triangular creamy or sandy buff spots at their ends; the top of the head dusky, the feathers marked with buffy shaft-lines. The sides of head and face and the lower surface dull whitish, streaked by the dusky margins to the feathers.

Geographical Range. — South America. From Colombia to Ecuador and Peru. From Venezuela, Guiana, throughout Brazil and to the Argentine Republic, being rare farther south.

With some hesitation this heron is included in the fauna of Patagonia, as it probably occurs as far south at least as the Rio Negro, though not commonly. It appears to be very common in the region south of La Plata. It was not procured or noticed by the naturalists of the Princeton Expeditions, but Mr. Hatcher has told of seeing a small heron which was not secured. From his description it was probably this species.

The descriptions are based on four individuals from the Museo de La Plata and Pozzi Collections in the Princeton University Museum, a fine series in the British Museum of Natural History and specimens in the Paris Museum.

The nearest ally to *B. striata* appears to be *B. atricapilla*, peculiar to tropical Africa and Madagascar. This is of interest from the point of view of dispersal or distribution, as the North American form, *B. virescens*, and its allies touch the northern range of *B. striata*. Now *B. striata* does not resemble *B. virescens* in color, but so closely resembles *B. atricapilla* as to be difficult to discriminate. *B. atricapilla* in its tone is nearly like *B. javanica*, which is found in the Indian Peninsula, Ceylon, south China, the Malay Peninsula, the Philippine group, etc. So that here we have a good example of species of a genus widely separated geographically, which are almost identical in appearance, and of two species of the same genus whose ranges almost overlap and yet are very different in color.

Mr. Barrows found this bird common and breeding in the region about the town of Concepcion del Uruguay; this is some hundred and sixty miles directly north of Buenos Aires. He describes the bird as unsuspicious and readily observed at a short distance. Its general habits seem not unlike those of *B. virescens* and it is eminently, as is that bird, a diurnal and not a nocturnal bird; green herons go to roost early in the twilight and are not even crepuscular in their habits. They fish in shoal water for small fish, frogs and fresh-water crayfishes; their agility in catching their tiny prey is noticeable, and yet at times they rely on their immobility, allowing the desired minnow to approach, when the unfortunate is fixed by a single dexterous stroke.

Genus ARDETTA Gray.

Type.

Ardetta, Gray, List Gen. 1842, App. p. 13; Sharpe, Cat. Bds.

Brit. Mus. XXVI. p. 220 (1898); id. Hand-List Bds.

I. p. 202 (1899) *A. minuta*.

Ardeola, Bonap. Ann. Lyc. N. Y. II. p. 307 (1826) (nec

Boie, 1822) *A. exilis*.

Erodiscus, Gloger, Handb. I. p. 410 (1842) *A. minuta*.

Geographical Range. — Almost cosmopolitan in temperate and tropical regions.

ARDETTA INVOLUCRIS (Vieillot).

Garza varia, Azara, Apunt. III. p. 185 (1805).

Ardea variegata, Vieill. (nec Scop.), N. Dict. d'Hist. Nat. XIV. p. 424 (1817: ex Azara).

Ardea involucris, Vieill. Enc. Méth. III. p. 1127 (1823); Gray, Handl. B. III. p. 31, no. 10152 (1871).

Ardea exilis (pt.), Gray, Gen. B. III. p. 556 (1847).

Ardea erythromelas (pt.), Hartl. Ind. Azara, p. 23 (1847).

Ardetta exilis (nec Gm.), Des Murs in Gay's Hist. Chil. Zool. I. p. 411 (1847); James, New List Chil. B. p. 8 (1892); Schalow, Zool. Jahrb. Suppl. IV. p. 679 (1898); Albert, Contr. Estud. Aves Chil. I. p. 295 (1899).

Ardeola humilis Licht. Nomencl. Av. Mus. Berol. p. 89 (1854: Chili).

Ardea erythromelas (nec Vieill.), Pelz. Reis. Novara, Vög. p. 124 (1865: Chili).

Ardetta involucris, Scl. & Salv. P. Z. S. 1869, p. 634 (Argentine Republic); iid. Nomencl. Av. Neotr. p. 125 (1873); Huds. P. Z. S. 1875, pp. 623-631 (habits); Durnf. Ibis, 1876, p. 162, 1877, p. 189 (Buenos Aires), 1878, p. 62 (nest and eggs described); Gibson, Ibis, 1880, p. 159 (Cape San Antonio); Barrows, Auk, I. p. 271 (1884: Concepcion, summer: Carhué, April); Withington, Ibis, 1888, p. 470 (Lomas de Zamora); Scl. & Huds. Argent. Orn. II. p. 101, pl. xvi, (1889); Holland, Ibis, 1890, p. 425, 1892, p. 205 (Estancia Espartilla resident, breeds in November); Sharpe, Cat. B. Brit. Mus. XXVI, p. 235 (1898: Patagonia); id. Hand-list B. I. p. 203 (1899).

Botaurus erythromelas, Reichen. (nec Vieill.), J. f. O. 1877, p. 244.

Ardetta erythrolæma, Heine & Reichen. Nomencl. Mus. Hein. p. 308 (1890: Chili).

Butorides involucris, Scl. Ibis, 1892, p. 561.

Botaurus involucris, Ridgw. Man. N. Amer. B. p. 128 (1896).

Ardetta erythromelas (nec Vieill.), Schalow, Zool. Jahrb. Suppl. IV. p. 679 (1898).

GENERAL DESCRIPTION.

Size. — Total length, about 13.0 inches.

Wing, 4.9.

Culmen, 2.0.

Tail, 1.9.

Tarsus, 1.7.

The adults of both sexes are of about the same size.

FIG. 211.



Ardetta involucris, P. U. O. C.

FIG. 212.



The same : details of the unleathered parts of leg and foot.

Color.—(Male cited.) General color. Back striped black, cinnamon and buff. Neck dry corn-color. A black and cinnamon cap on head. Lower parts white, striped with corn-color and brown.

Head: A median cap of deep black elongated feathers. The mid forehead bright cinnamon, which divides when the black cap is reached and forms a narrow bright cinnamon border on each side. This border gradually becomes narrower and disappears toward the back of the crown. Feathered portion of lores and entire sides of head and face dry corn-color, finely washed with greyish. A dark narrow line of cinnamon divides this from the white region of chin and throat.

Neck: Dry corn-color washed with grey and cinnamon. The feathers of the sides of the neck form a sort of frill and, being long, cover the top of the neck, which is almost naked and has no contour-feather tract. The chin and throat dull white, with a median stripe or line of dull yellowish corn-color, sometimes tinged with cinnamon. Rest of the neck white, with central streaks, and the terminal portion of many of the feathers dull yellowish corn-color, having blackish mid lines.

Back: Mantle striped in general effect, each feather elongate and dark blackish brown in the center, shading into bright chestnut or cinnamon, or changing abruptly into buffy cream or dull ochre. The scapulars with blackish brown centers bordered with creamy buff, the two colors being generally separated by a narrow line of bright chestnut or cinnamon.

Lower back and rump dull ochre, shaded with greyish brown. Upper tail-coverts tawny, with creamy buff edges.

Tail: Rectrices dark reddish brown in the center, with creamy buff edges.

Wings: The smaller coverts round the shoulder cinnamon chestnut. The median coverts pale ochre or dull corn-color, with creamy buff or whitish edges, giving a streaked appearance. Greater coverts similar, but many of them with much bright chestnut on their inner webs. Bastard wing and primary coverts cinnamon-chestnut at their extremities and black at their bases. Quills black, strongly frosted with grey and with broad chestnut tips. The first primary often, but not always, creamy or white on its outer edge. The amount of chestnut increasing on the secondaries, the innermost of which are chestnut, with dusky bases and creamy buff margins, giving a striped appearance similar to that of the scapulars.

Lower parts: The under neck as described. The breast yellower in ground color, and streaked with deeper corn-color, many of the feathers having narrow mid lines of blackish, shading into chestnut. This is most apparent on the sides and flanks. On each side of the breast a series of elongated pendant plume feathers, blackish brown in the center and with broad creamy margins; the two colors being separated by a narrow bright chestnut line, abrupt on the black area and shading into the creamy one. Under wing-coverts and axillaries white, with buffy suffusions, the latter with ashy bases.

Legs and feet: Pale yellowish green.

Bill: Golden yellow, shading into pale yellowish green at base, which color prevails on the bare skin about the eye.

Iris: Pale straw-color.

Adults do not vary with the different seasons of the year.

Geographical Range. — Paraguay, Southern Brazil, Chili and Northern Patagonia.

The variegated Least Bittern was not obtained or recorded by the naturalists of the Princeton Expeditions; the range of the bird being restricted to a part of Patagonia not visited. Princeton University has a single male bird and this, with some six specimens in the British Museum of Natural History, has afforded a basis for the description given above.

"This tiny Heron, so similar to our own *A. exilis*, seems to be a rather

common summer resident from Brazil almost or quite to Patagonia. Indeed it may remain the whole year round in the marshes of the Pampas, for while I met with it only in the summer at Concepcion I several times saw it at Carhué in April, long after winter had fairly set in. It is rarely seen, even where most abundant, and it is almost impossible to get a second sight of one that has been once started from the reeds. I did not succeed in finding its nest." (Barrows, Auk, i, 1884, p. 271.)

Order PHÆNICOPTERIFORMES.

Sharpe, Classif. Bds. p. 76, 1891; Sharpe, Hand-List Bds. I. p. 205, 1899.

Family PHÆNICOPTERIDÆ.

Salvadori, Cat. Bds. Brit. Mus. XXVII. p. 8, 1895; Sharpe, Hand-List Bds. I. p. 205, 1899.

Genus PHÆNICOPTERUS Linnæus.

Type.

Phænicopterus, Linn. Syst. Nat. I. p. 230 (1766); Salvadori, Cat. Bds. Brit. Mus. XXVII. p. 9. (1895); Sharpe, Hand-List Bds. I. p. 205 (1899) *P. ruber*.

Phænicorodias (subgenus), G. R. Gray, Ibis, 1869, p. 441 . . . *P. ruber*.

Geographical Range.—Southern North America, nearly all of South America. Southern Europe to Central Asia; Africa, India and Ceylon.

PHÆNICOPTERUS CHILENSIS Molina.

Flamant d'Amérique, D'Aubent. Pl. Enl. pl. 63 (1770).

Phænicopterus chilensis, Mol. Hist. Nat. Chile, p. 214 (1776); id. Saggio St. Nat. Chile 2nd ed. p. 203 (1810); Fraser, P. Z. S. 1843, p. 117 (S. Chili); Gray, List B. Brit. Mus. Part III. p. 125 (1844); Schl. Mus. Pays-Bas. VI. Anseres, p. 117 (1866: Chili); Salvad. Cat. B. Brit. Mus. XXVIII. p. 16 (1895); Sharpe, Hand-list B. I. p. 205 (1899); Martens, Hamb. Magalh. Sammelr. Vög. p. 24 (1900: South Patagonia).

Chili Flamingo, Lath. Gen. Syn. Suppl. II. p. 330 (1801).

Flamenco, Azara, Apunt. III. p. 133 (1805).

Phoenicopterus ruber (part), Vieill. N. Dict. d'Hist. Nat. XXV. p. 517 (1817: La Plata).

Phoenicoptère du Chili, Vieill, tom. cit. p. 520.

Phoenicopterus ignipalliatus, D'Orb. & Isid Geoffr. St. Hil. Ann. Sc. Nat. XVII. p. 454 (1829: Buenos Aires: Corrientes); Hartl. Ind. Azara, p. 22 (1847); Bibra, Denkschr. K. Ak. Wien, V. p. 131 (1853: N. Chili); Licht. Nomencl. Av. Mus. Berol. p. 90 (1854: Chili); Burm. La Plata Reis. II. p. 512 (1861: Mendoza: Paraná: Rosario: Buenos Aires); Pelz. Reise Novara, Vög. p. 136 (1865: Chili); Scl. P. Z. S. 1867, p. 334 (Chili); Scl. & Salv. P. Z. S. 1868, p. 145 (Conchitas); iid. Ibis, 1868, p. 139 (Gregory Bay); Philippi & Sandb. Cat. Av. Chil. p. 279 (1868); Gray, Handl. B. III. p. 72, no. 10547 (1871); Cunn. Nat. Hist. Str. Magell. p. 210 (1871: Gregory Bay); Burm. P. Z. S. 1872, p. 364 (Mendoza); Huds. t. c. p. 549 (Rio Negro); Scl. & Salv. Nomencl. Av. Neotrop. p. 107 (1873); Durnf. Ibis, 1877, p. 41 (Chupat Valley), 1878, p. 400 (Lake Colgaupe & Sengel River, common); Gibson, Ibis, 1880, p. 156 (Cape San Antonio); Doering, Expèd. al Rio Negro, Zool. Aves, p. 52 (1881-82: Carhué: Laguna de Manaco); Barrows, Auk, I. p. 272 (1884: Paun, March, April); Burm. An. Mus. Nac. Buenos Aires, III. part X. p. 247 (1888: Patagonia); Philippi, Ornith. IV. p. 160 (1888: Antofagasta); Scl. & Huds. Argent. Orn. II. p. 117 (1889); Scl. Ibis, 1890, p. 81 (Aquintocubital); Holland, t. c. p. 425 (Buenos Aires); Burm. An. Mus. Nac. Buenos Aires, III. part XI. p. 319 (1890: Chupat River); Oust. Miss. Scient. Cap Horn, Ois. p. 308 (1891); Frenz. J. f. O. 1891, p. 124 (Cordoba); James, New List Chil. B. p. g. (1892); Holland, Ibis, 1892, p. 206 (Estancia Esparilla, May to August); Alpin, Ibis, 1894, p. 199 (Uruguay).

GENERAL DESCRIPTION.

Size.—Adult female. (7863 P. U. O. C. Possa de la Reina (50 miles north of Punta Arenas), Patagonia, 15 January 1898, A. E. Colburn.) Total length, about 42.0 inches.

Wing, 15.9.

Culmen, 5.2.

Tail, 5.0.

Tarsus, 9.4.

There appears to be no variation in size among adults, in correlation with sex.

Color.—Adult female (cited). General color, rosy salmon-pink, becoming vermillion on parts of the wings. The quills black.

Head: Rosy salmon-pink.

Neck: Rosy salmon-pink, becoming deeper colored toward the body.

Back: Mantle rosy salmon-pink. Scapulars like the back. Lower

FIG. 213.

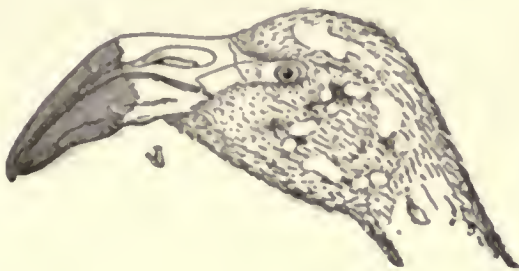


FIG. 214.



Phœnicopterus chilensis, adult female, 7863 P. U. O. C.
Profile of head and bill.

The same: details of bill from above.

back, rump and upper tail-coverts pale salmon-pink. The upper tail-coverts extend almost to the end of the rectrices.

Tail: Rectrices deep rosy salmon-pink.

Wings: All the coverts clear vermillion on their exposed surfaces, paling toward their bases. The greater series elongate and extending beyond (1 in. +) the tips of the primaries, when the wing is closed. The quills black, except the innermost secondaries, which are rosy.

Lower parts: Breast and chest clear rosy salmon-pink, shading into paler on the sides, flanks, abdomen and lower tail-coverts. The lower tail-coverts long, nearly concealing the rectrices. Under wing-coverts and axillaries clear vermillion.

Bill: Base of bill and naked skin about the eye white, with a tinge of salmon-pink; this color prevails till *within half an inch of the bend of the bill* where it terminates abruptly. The rest of the bill is black (see Fig. 214).

Iris: Pale greyish blue, almost white. Sometimes pale lemon-yellow.

Legs and feet: Pale salmon-pink, shaded with greyish at the joints. The webs similar. In younger birds in the pink plumage the legs are much greyer and have a greenish shading. Immature birds are dull white, shaded on the sides of the head and neck with greyish brown.

FIG. 215.



Phœnicopterus chilensis, 7863, P. U. O. C. Details of foot.

The back and scapulars are pale brown, each feather shading to dull white on its edges. The lower back, rump and upper tail-coverts dull white, with some greyish brown streaking and shading. The upper wing-coverts brown with lighter edges, those of the shoulders sometimes tinged with reddish. Primary coverts brown, often with a vermilion shading at the base. The quills dull brownish black. Tail dull white, shaded more or less with greyish brown. Lower parts dull white, with greyish brown shading on sides and flanks.

Geographical Range.—Southern South America. From the Straits of Magellan (rarely) throughout Patagonia and Chili, north to Uruguay and Peru.

The naturalists of the Princeton Expeditions secured a series of five adults of the Chilian Flamingo, and these, with the series in the British Museum of Natural History, have afforded a basis for the description given. In his MS. notes Mr. J. B. Hatcher speaks of them as "common about the fresh and salt lagoons of the Patagonian plains, especially those near to the sea coast, that is from one to 50 miles back. The birds are shy and difficult to approach." Near Gregory Bay, Straits of Magellan,

Dr. Cunningham obtained three specimens. He says: "Apparently they are but rare in the neighborhood of the Strait, for this was the only occasion on which we observed specimens." These were young or immature birds and "the plumage was chiefly composed of somber grey and brown tints, but on the inside of the wings there was a lovely pale rosy hue, recalling a dying sunset flush."

Order ANSERIFORMES.

Sharpe, *Classif. Bds.* p. 76 (1891); Sharpe, *Hand-List Bds. I.* p. 207 (1899).

Family ANATIDÆ.

Salvadori, *Cat. Bds. Brit. Mus. XXVII.* p. 23 (1898); Sharpe, *Hand-List Bds. I.* p. 207 (1899).

Subfamily CYGNINÆ.

Salvadori, *Cat. Bds. Brit. Mus. XXVII.* p. 24 (1898); Sharpe, *Hand-List Bds. I.* p. 207 (1899).

Genus CYGNUS Bechstein.

Type.

- Cygnus*, Bechst. *Orn. Taschenb. II.* p. 404 (note) (1803); *Salvad. Cat. Bds. Brit. Mus. XXVII.* (1898); Sharpe, *Hand-List Bds. I.* p. 207 (1899). *C. olor.*
Olor, Wagler, *Isis*, 1832, p. 1234. *C. (Cygnus) musicus.*
Cygnus, Temm. *Man. d'Orn.* 2nd ed. IV. p. 526 (1840).
Sthenelus, Stejneger, *Pro. U. S. Nat. Mus. V.* p. 185 (1882). *C. melanocoryphus.*
Sthenelides, Stejneger, *Kingsl. Stand. Nat. Hist. IV.* p. 143 (1885) (= *Sthenelus*).

Geographical Range.—The Northern Hemisphere and the Neotropical Region.

CYGNUS MELANOCORYPHUS (Molina).

Anas melanocorypha, Mol. Sagg. Stor. Nat. Chile, p. 207 (1782); 2nd ed. p. 199 (1810).

Black-necked Swan, Lath. Gen. Syn. III. pt. ii. p. 438 (1785: Falkland Isl.; Straits Magellan; Rio de La Plata).

Anas nigricollis, Gm. Syst. Nat. I. p. 502 (1788: ex Lath.).

Anas melanocephala, Gm. tom. cit. p. 502 (ex Molina).

Anser melanocoryphus, Bonn. Enc. Méth. I. p. 108 (1790).

Anser nigricollis, Bonn. tom. cit. p. 108.

Cisne de cabeza negra, Azara, Apunt. III. p. 404 (1805).

Cygnus melanocephalus, Vieill. N. Dict. d'Hist. Nat. IX. p. 42 (1817); Licht. Nomencl. Mus. Berol. p. 101 (1854: Montevideo).

Cygnus nigricollis, Dum. Dict. Sc. Nat. XII. p. 313 (1818); D'Orb. Voy. Amér. Mérid. Itin. II. p. 304 note (1839); Fraser, P. Z. S. 1843, p. 118 (Chili, lakes near the coast); Gray, List B. Brit. Mus. Part iii. p. 130 (1844); id. Gen. B. III. p. 610 (1844); Hartl. Azara, p. 27 (1847); Des Murs in Gay's Hist. Nat. Chil. Zool. I. p. 445, pl. 14 (1847); Bibra, Denkschr. K. Ak. Wissensch. V. p. 131 (1853); Cass. U. S. Astron. Exped. Birds p. 200 (1856); Gould, P. Z. S. 1859, p. 98 (Falkland Isl.); Scl. t. c. p. 206 (Incubation); Burm. J. f. O. 1860, p. 266; Wolf & Scl. Zool. Sketches, I. pl. 48 (1861); Abbott, Ibis, 1861, p. 159 (Falkland Isl., resident); Burm. La Plata Reis. II. p. 512 (1861: Paraná); Pelz. Reis. Novara, Vög. p. 137 (1865: Chili); Schl. Mus. Pays Bas VI. Anseres, p. 79 (1866: Santiago, Crâne, Chili); Scl. P. Z. S. 1867, p. 334 (small mountain lakes of Chili); Phil. & Landb. Cat. Av. Chil. p. 50 (1868); Cunningh. Ibis, 1868, p. 488 (Sandy Point); Scl. & Salv. P. Z. S. 1868, p. 145 (Conchitas); iid. Ibis, 1869, p. 284 (Elizabeth Isl.); Newton, Ibis, 1870, p. 504 (Elizabeth Isl. Oct., eggs); Cunningh. Nat. Hist. Str. Magell. p. 266 (1871); Gray, Handl. B. III. p. 78, no. 10599 (1871); Burm. P. Z. S. 1872, p. 365 (Paraná); Garrod. P. Z. S. 1873, pp. 467, 639; Scl. & Salv. Nomencl. Av. Neotr. p. 129 (1873); Garrod, P. Z. S. 1875, p. 348; Gulliv. t. c. p. 488; Durnf. Ibis, 1876, p. 163 (Buenos Aires, Oct.); Scl. & Salv. P. Z. S. 1876, p. 370 (Falkland Isl.; Straits of Magellan: La Plata: Chili); Durnf. Ibis, 1877, pp. 41 (Chupat Valley), 191 (Baradero, April), 1878, p. 400 (Sengel & Sengel rivers, breeding); Gibson, Ibis, 1879, p. 415, 1880, p. 33

(Cape San Antonio, Buenos Aires, breeding); Scl. P. Z. S. 1880, p. 508; Sharpe, P. Z. S. 1881, p. 14 (Hugh Bay); Milne-Edwards, Faun. Rég. Austr. An. Sci. Nat. (6) xiii. Art. 9 p. (1882); Doering, Expl. al Rio Negro, Aves, p. 53 (1882); Barrows, Auk, I. p. 273 (1884: Entrerios); Berl. J. f. O. 1887, p. 133 (Santa Catarina; Paraná: Buenos Aires); Burm. An. Mus. Nac. Buenos Aires, III. part X. p. 247 (1888: Patagonia); Scl. & Huds. Argent. Orn. II. p. 124, pl. xviii (1889); Burm. An. Mus. Nac. Buenos Aires, III, part XI, p. 319 (1890: Fortin Villegas); Graham Kerr, Ibis, 1890, p. 358; Evans, Ibis, 1891, p. 71 (Incubation); Frenzel. J. f. O. 1891, p. 125 (Cordoba); Holland, Ibis, 1892, p. 206 (Estancia Espartilla, resident, breeds early in August); James, New List Chil. B. p. 9 (1882); Aplin, Ibis, 1894, p. 200 (Uruguay); Lane, Ibis, 1897, p. 191 (Rio Pilmaiguen: Central and Southern Chili, migratory).

Anas melanocoryphus "Mol." Less. Compl. de Buff. Ois. IX. p. 528 (1837).

Sthenelus melanocoryphus, Stejn. Proc. U. S. Nat. Mus. V. p. 185 (1882).

Sthenelides melanocoryphus, Stejn. Stand. Nat. Hist. IV. Birds, p. 143 (1885).

Cygnus melanocoryphus, Salvad. Cat. B. Brit. Mus. xxvii. p. 39 (1895); Schalow, Zool. Jahrb. Suppl. IV. p. 677 (1898); Sharpe, Hand List B. I. p. 207 (1899); Martens, Hamb. Magalh. Sammlr., Vög. p. 24 (1900: Straits of Magellan: Falkland Islands).

GENERAL DESCRIPTION.

Size.—Adult male, P. U. O. C., 7858, Rio Coyle, Southern Patagonia, 3 February 1898, A. E. Colburn.

Total length, about 49.0 inches.

Wing, 17.7.

Culmen, 3.4.

Tail, 5.6.

Tarsus, 3.5.

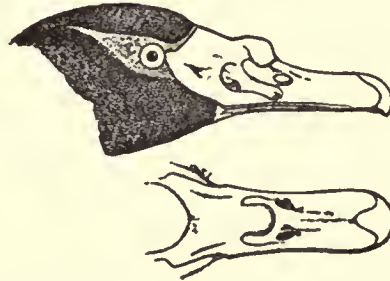
The adult female is a little smaller than the adult male. (Female adult P. U. O. C. Rio Coyle, Southern Patagonia, 3 February 1898, A. E. Colburn.)

Color.—(Adult male cited.) General color white, except the neck and head, which are chiefly black.

Head: Velvety black. A white line occupies part of the lores and

extends backward surrounding the eye and, joining behind it, extends backward almost to the median line of the nape. The chin and base of

FIG. 216.



Cygnus melanocoryphus 7858, P. U. O. C. Profile of head and bill from above. Greatly reduced.

lower mandible are frequently defined by a narrow white area (see Fig. 216).

Neck: Entirely velvety black, except for its posterior few (4) inches, where it becomes abruptly pure white.

Back: White.

Tail: White.

Wings: White.

Entire lower parts, except anterior lower neck as described, white.

Iris: Dark brown.

Bill: "Plumbeous with base and knob red" (Natterer).

Feet: "Brownish flesh color" (Colburn).

The adult female does not differ from the adult male in color. (Adult female cited above.)

Immature birds lack the frontal knob on the bill. The head and neck are dull brownish black, much lighter than in the adult. The white feathers of the upper parts and the wings and tail are more or less marked with dull greyish rusty brown, which color prevails on the tips of the primary quills. The lower parts are also marked in a less degree with dull rusty brown.

Downy birds are greyish white.

Geographical Range.—Southern Brazil, Paraguay, Uruguay and thence south through Argentina, Chili and Patagonia to the Falkland Islands.

Mr. J. B. Hatcher in MS. note says: "We observed the Black-necked Swan as an abundant species about the inland waters of the Patagonian plains, it being much commoner than the White Swan."

"The swans belonged to two distinct species, two of them being examples of the *Cygnus nigricollis* with white body-plumage and black necks, heads, and bills, the last of which were endowed with a knob of considerable size, at the base; while the third was a specimen of the *Cygnus coscoroba*, the entire plumage of which, with the exception of a few black feathers in the wings, was pure white, and the feet and bill pink, the latter being destitute of a knob, and considerably broader and flatter than that of the black-necked species. Both sorts had apparently resorted to Elizabeth Island for breeding purposes, as our party found nests which evidently belonged to them; and earlier in the season, in the month of October, eggs of one or other species were collected on the island by one of the servants of the governor of Sandy Point. This, I think, was the only occasion on which we met with swans in the Strait, though, a month later, specimens of the *C. coscoroba* were obtained in the vicinity of the Gallegos river. Both species are noticed by Captain King; and in the journal of Mr. Kirk, who was associated with Lieutenant Skyring in the survey of the Western Channels of Patagonia, I find mention made of islets in the neighbourhood of Obstruction Sound which were covered with immense numbers of 'black-necked swans, mixed with a few which had black-tipped wings.' Both species also occur in South Chili, and in the countries bordering the River Plate. The skinning of one of the individuals of the black-necked species occupied me fully during the 28th, and I ascertained that neither in it nor in the *C. coscoroba* does a fold of the trachea enter the keel of the sternum." (Elizabeth Island, Straits Magellan, 27th November, 1867.) Cunn. Nat. Hist. Strait of Magellan, 1871, pp. 226–267.

"The first importation of the Black-necked Swan was affected by the exertions of Admiral Hornby. When this officer was in command on the Pacific station he succeeded in sending home at different periods, to the late Earl of Derby, eight individuals of this species, of which six were living at the dispersion of the Knowsley collection in 1851. The present Earl of Derby presented a pair of those birds to Her Majesty the Queen, and the two remaining pairs passed into the possession of the Zoological Society. They, however, for several seasons made no attempt at reproduction, and one of them having died, the apparent chance of continuing

the species depended on one pair. Fortunately, in the year 1857, these not only made a nest, as had been done in 1856, but hatched out four young birds, which rapidly arrived at full size and colour, and at the end of autumn could scarcely be distinguished from their parents. The same success occurred in 1858, with the fortunate and singular result that the four birds of 1857 were all males, and the birds of 1858 females." (Sclater and Wolf, Zool. Sketches, i. sub tab. xlviii.)

"Since this was written (in 1861) numerous importations of the Black-necked Swan have taken place, and the species may be considered completely established in Europe. We have eight examples of it now in the Gardens.

"The subjoined list gives the dates of the hatchings.

"Dates of Hatching of Black-necked Swans. (In the Zoological Gardens, London.)

1857. June 23d.	1868. June 22d.
1858. July 3d.	1873. July 3d.
1859. June 27th.	1877. " 10th.
1865. May 19th.	1878. " 20th.
1866. " 4th.	1879. May 23d."
1867. " 9th.	

(P. L. Sclater, P. Z. S. p. 508, 1880.)

"On the pampas the gauchos frequently take the black-necked swan by frightening it. When the birds are feeding or resting on the grass, two or three men or boys on horseback go quietly to leeward of the flock, and when opposite to it suddenly wheel and charge it at full speed, uttering loud shouts, by which the birds are thrown into such terror that they are incapable of flying, and are quickly despatched." (Huds. Natur. La Plata, 1892, pp. 201-202.)

"Never river seemed fairer to look upon: broader than the Thames at Westminster, and extending away on either hand until it melted and was lost in the blue horizon, its low shores clothed in the glory of groves and fruit orchards and vineyards and fields of ripening maize. Far out in the middle of the swift blue current floated flocks of black necked swans, their white plumage shining like foam in the sunlight; while just beneath us, scarcely a stone's throw off, stood the thatched farmhouse of our conductor,

the smoke curling up peacefully from the kitchen chimney. A grove of large old cherry trees, in which the house was embowered, added to the charm of the picture; and as we rode down to the gate we noticed the fully ripe cherries glowing like live coals amid the deep green foliage." (Huds. "Idle Days in Patagonia," 1893, p. 17.)

Genus COSCOROBA Reichenbach.

Type.

- Coscoroba*, Reichenb. Av. Syst. Nat. p. x (1852); Salvad. Cat. Bds. Brit. Mus. XXVII. p. 42 (1898); Sharpe, Hand-List Bds. I. p. 210 (1899). *C. coscoroba*.
Pseudolor, G. R. Gray, MSS., fide. G. R. Gr. Cat. Gen. & Sub. Gen. Bds. p. 122 (1855). *C. coscoroba*.
Pseudocycnus, Sundev. Meth. Nat. Av. disp. Tent. p. 147 (1872). *C. coscoroba*.

Geographical Range. — Peculiar to Southern South America.

COSCOROBA COSCOROBA (Molina).

- Anas coscoroba*, Mol. Sagg. Stor. Chile, p. 207 (1782), p. 323 (1789), p. 198 (1810); Eyd. et Gerv. Mag. de Zool. 1836, p. 36; iid. Voy. Favourite, Ois. p. 62 (1839).
Anser coscoroba, Bonn. Enc. Mèth. I. p. 112 (1790).
Ganso blanco, Azara, Apunt. III. p. 406 (1805).
Anser candidus, Vieill. N. Dict. d'Hist. Nat. XXIII. p. 331 (1819); id. Enc. Meth. I. p. 351 (1820).
Cygnus anatoides, King, P. Z. S. 1830, p. 15 (Straits of Magellan); Cunningham. Ibis, 1868, p. 488.
Cygnus hyperboreus, D'Orb. (nec Pall.) Voy. Amér. Mérid. Itin. II. p. 304 (1839).
Olor coscoroba, Gray, List B. Brit. Mus. Part iii. p. 131 (1844).
Cygnus coscoroba, Gray, Gen. B. III. p. 610, pl. 131 (1844); Reichenb. Syn. Av. Natatores, pl. 106 fig. 966 (1845); Des Murs in Gay Hist. Nat. Chil. Zool. I. p. 446 (1847); Hartl. Ind. Azara, p. 27 (1847); Hartl. Naum. 1853, p. 222 (Valdivia); Scl. P. Z. S. 1860, p. 388; Burm. J. f. O. 1860, p. 266; id. La Plata Reis. II. p. 512 (1861: Paraná); Abbott, Ibis, 1861, p. 159 (Falkland Isl.); Pelz. Reis.

- Novara, Vög. p. 137 (1865: Chili); Schl. Mus. Pays Bas. IV. Anseres, p. 83 (1866); Scl. P. Z. S. 1867, pp. 334, 339 (Chili); Phil. & Landb. Cat. Av. Chil. p. 41 (1868); Scl. & Salv. Ibis, 1869, p. 284 (Rio Gallegos); Scl. P. Z. S. 1870, p. 666, 1871, p. 545; Cunningh. Nat. Hist. Str. Magell. p. 267 (1871: Gallegos river); Burm. P. Z. S. 1872, p. 365; Garrod, P. Z. S. 1873, pp. 467, 639 (Anatomy); Scl. & Salv. Nomencl. Av. Neotr. p. 129 (1873); iid. P. Z. S. 1876, p. 371; Durnf. Ibis, 1876, p. 163 (Buenos Aires): 1877, p. 41 (Chupat Valley), p. 191 (Baradero, winter visitor); 1878, p. 400 (Chupat Valley, not observed); Gibson, Ibis, 1880, p. 36 (Cape San Antonio, Buenos Aires, breeds); Durnf. t. c. p. 425; Doering, Expl. al Rio Negro, Zool. Aves, p. 53 (1882: abundant in the lagunas of the Pampas); Scl. P. Z. S. 1880, p. 507; Forbes, P. Z. S. 1882, p. 352; Berl. J. f. O. 1897, p. 124; Withington, Ibis, 1888, p. 471 (Lomas de Zamora); Burm. An. Mus. Nac. Buenos Aires, Part X. p. 247 (1888: Patagonia); Frenz. J. f. O. 1891, p. 125 (Cordoba).
- Anas chionis*, Illig., Gray, Gen. B. III. p. 610 (1844).
- Coscoroba candida*, Reichenb. Av. Syst. Nat. p. 10 (1852); Stejn. Proc. U. S. Nat. Mus. V. p. 179 note (1882); Scl. & Huds. Argent. Orn. II. p. 126 (1899); Graham Kerr, Ibis, 1890, p. 358 (Pilcomayo); James, New List Chil. B. p. 9 (1892); Holland, Ibis, 1892, p. 206 (Estancia Espartilla, common, breeds in Oct.); Alpin, Ibis, 1894, p. 200 (Uruguay); Salvad. Cat. B. Brit. Mus. XXVII. p. 42 (1895); Martens, Hamb. Magalh. Sammelr. Vög. p. 24 (1900: South Patagonia: Falkland Islands).
- Cygnus chionis*, Licht. Nomencl. Mus. Berol. p. 101 (1854).
- Coscoroba chionis*, Bp. C. R. XLIII. p. 648 (1856).
- Pseudocycnus coscoroba*, Sund. Meth. Av. Tent. p. 147 (1872).
- Pseudolor chionis*, Reichen. Orn. Centralbl. 1882, p. 39.
- Coscoroba coscoroba*, Stejn. Stand. Nat. Hist. IV. Birds, p. 147 (1885); Sharpe, Hand-list B. I. p. 210 (1899).
- Pseudolor coscoroba*, Hartert, Kat. Vogelsamml. p. 226 (1898).

GENERAL DESCRIPTION.

Size.—Adult male P. U. O. C. 7960. Rio Chico de Santa Cruz, Patagonia, 14 March 1898, A. E. Colburn.

Total length, 41.0 inches.

Wing, 17.6.

Culmen, 2.7.

Tail, 5.9.

Tarsus, 3.8.

The female adults do not differ from adult males in size. (Adult female

FIG. 217.



Coscoroba coscoroba, 7960 P. U. O. C.
Profile of head and bill. About $\frac{1}{3}$ natural size.

FIG. 218.



The same: bill from above.

P. U. O. C. 8318. Rio Chico de Santa Cruz, Patagonia, 14 March 1898, A. E. Colburn.)

Color. — Adult male cited above. Pure white throughout, except the terminal portion (two to three inches) of the primaries, which is black.

The adult female is like the adult male in color.

"Iridus: Light speckled red" (Withington). "Feet and bill pink" (Cunningham).

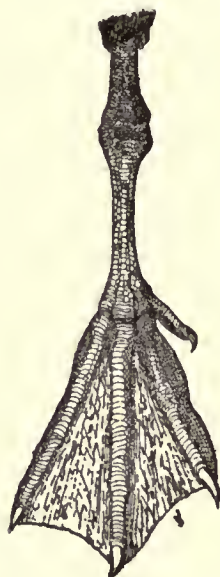
Geographical Range. — Paraguay, Uruguay, and south through Argentina and Chili, throughout Patagonia and to the Falkland Islands.

Mr. Hatcher found the Patagonian White Swan generally distributed throughout Patagonia. In his MS. notes he writes that it is "not nearly so plentiful as the Black-necked Swan, but of the same distribution. A very wary bird, systematically shy."

Mr. Hatcher is not alone in his experience with the White Swan of Patagonia; Cunningham in his admirable notes and Hudson both seem to have met with the Black-necked Swan much more frequently than with

the bird under consideration. Darwin has nothing on the species in Gould's Report, nor does he allude to the bird in "The Naturalist's Voyage."

FIG. 219.



Coscoroba coscoroba, adult male, 7960, P. U. O. C. Details of foot and leg. Reduced.

Subfamily CHENONETTINÆ.

Salvadori, Cat. Bds. Brit. Mus. XXVII. p. 128, 1895; Sharpe, Hand-List Bds. I. p. 213, 1899.

Genus CHLOËPHAGA Eyton.

	Type.
<i>Chloëphaga</i> , Eyt. Mon. Anat. p. 13 (1838)	<i>C. magellanica</i> .
<i>Tænidiaestes</i> , Rchnb. Av. Syst. Nat. p. ix (1822)	<i>C. antarctica</i> .
<i>Oressochen</i> , Bann. Pro. Acad. Nat. Sci. Philad. 1870, p. 131	<i>C. melanopectera</i> .
<i>Chloetrophus</i> , Bann. Pro. Acad. Nat. Philad. 1870, p. 131.	<i>C. poliocephala</i> .
<i>Chloophaga</i> , Sund. Meth. Nat. Av. disp. Tent. p. 145 (1872).	
<i>Tænidiesthes</i> , Heine, Nomencl. Mus. Hein. Orn. p. 342 (1890).	

Geographical Range.—Peculiar to South America.

CHLOËPHAGA MELANOPTERA (Eyton).

? *Otis chilensis*, Mol. Sagg. Stor. Nat. Chile, p. 260 (1782), 2nd ed. p. 219 (1810).

Anser melanopterus, Eyton, Mon. Anat. p. 93 (1838: Lake Titicaca); Gould, Voy. Beagle, Birds, p. 134, pl. 50 (1841); Fraser, P. Z. S. 1843, p. 118 (Colchagua); Schl. Mus. Pas Bas, Anseres, p. 100 (1866).

Anser montana, Isch. (nec Gm.) Archiv fur Nat. 1843, p. 390.

Anser anticola, Isch. op. cit. 1844, p. 315.

Bernicla melanoptera, Gray, List B. Brit. Mus. Part III. p. 128 (1844); id. Gen. B. III. p. 607 (1844); Des Murs in Gay Hist. Chile, Zool. I. p. 443 (1847); Hartl. Naum. 1853, p. 222 (Valdivia); Bibra, Denkschr. K. Akad. V. p. 131 (1853); id. J. f. O. 1855, p. 57; Cass. U. S. Astron. Exped. Birds, p. 101 (1856: Chili); Scl. P. Z. S. 1857, p. 128; Phil. & Landb. Arch. f. Nat. 1863, p. 185; Scl. Ibis, 1864, p. 121; Pelz. Reis. Novara, Vög. p. 137 (1865: Chili); Scl. P. Z. S. 1867, pp. 320, 334, 339; Phil. & Landb. Cat. Av. Chil. p. 40 (1868); Scl. & Salv. P. Z. S. 1869, p. 156 (Pitumarca); Burm. P. Z. S. 1872, p. 365; Scl. & Salv. Nomencl. Av. Neotr. p. 128 (1873); Leyb. Excurs. Pamp. Argent. p. 20 (1873); Scl. & Salv. P. Z. S. 1876, p. 362; Scl. P. Z. S. 1880, p. 504; id. P. Z. S. 1886, p. 401 (Sacaya); Phil. Orn. IV. p. 160 (1888: Brea); Scl. & Huds. Argent. Orn. II. p. 122 (1889); Scl. P. Z. S. 1891, p. 136 (Tarapacá); James, New List Chil. B. p. 9 (1892).

Bernicla anticola, Gray, Gen. B. III. p. 607 (1844).

Anser (Chloephaga) melanopterus, Isch. Faun. Per., Aves, pp. 54, 308 (1846).

Chloephaga melanoptera, Licht. Nomencl. Av. Mus. Berol. p. 100 (1854); Burm. La Plata Reise, II. p. 513 (1861: Cordilleras); Scl. Ibis, 1864, p. 122; Gray, Handl. B. III. p. 77, no. 10591 (1871); Burm. P. Z. S. 1872, p. 365; Gigl. Viagg. Mag. pp. 946, 957 (1876); Salvad. Cat. B. Brit. Mus. XXVII, p. 129 (1895); Lane, Ibis, 1897, p. 190 (Cordilleras of Tarapacá, resident); Sharpe, Hand-List B. I. p. 213 (1899); Carbajal, La Patagonia, Part II. p. 282 (1900); Martens, Hamb. Magalh. Sammelr. Vög. p. 24 (1900: Straits of Magellan).

Oressochen melanopterus, Bann. Proc. Ac. Philad. 1870, p. 131.

Anser (Brenthus) melanopterus, Reichen. Orn. Centralbl. 1882, p. 37.

Branta melanoptera, Hartert, Kat. Vogelsamml. p. 227 (1891).

GENERAL DESCRIPTION.

Size. — Adult male. Total length, about 28.0 inches.

Wing, 16.5.

Culmen, 1.7.

Tail, 6.2.

Tarsus, 3.2.

The adult female is appreciably smaller than the adult male.

Color. — Adult male. General color white, with black primaries and tail and dark brown and green markings on the wings.

Head: White throughout.

Neck: Entirely white.

Back: Mantle, lower back, rump and upper tail-coverts white. Anterior scapulars white with a brown median mark. Posterior scapulars dark brown, with a strong washing or gloss of dark green.

Wing: Upper wing-coverts and lesser coverts white. Lesser median coverts white; the greater median coverts dark blackish green, with a purple gloss, forming a speculum; the innermost of these coverts as well as the tertials dark glossy green. Primaries black. Secondaries chiefly white.

Lower parts: Wholly white, including the lower tail-coverts, the lower wing-coverts and axillaries.

Iris: "Grey-brown" (Phil. & Landb.).

Bill: "Cinnabar-red, with the nail black" (Phil. & Landb.).

"Tarsus, feet, and membranes cinnabar-red, with the nails black" (Phil. & Landb.).

The adult female is like the adult male in color.

Geographical Range. — Western South America, from Bolivia and Peru southward to the Straits of Magellan. Recorded from Sandy Point, Patagonia.

Mr. Hatcher did not observe this goose, nor was it procured by the other naturalists of the Princeton Expeditions. It is preëminently a bird of Chili and occurs in the Straits of Magellan even as far east as Sandy Point, where it must probably, however, be regarded as casual.

CHLOËPHAGA HYBRIDA (Molina).

Anas hybrida, Moll. Sagg. Stor. Nat. Chile, p. 213 (1782), 2nd ed. p. 198 (1810).

Antarctic Goose, Forst. It. pp. 495, 518; Lath. Gen. Syn. III. pt. ii. p. 442 (1785).

Anas magellanica, Spanm. (nec Gm.) Mus. Carls. II. pl. 37 ♀ (1787).

Anas antarctica, Gm. Syst. Nat. I. p. 505 (1788).

Anser hybridus, Bonn. Enc. Méth. I. p. 112 (1790).

Oie à tête cendrée, Bonn. t. c. p. 117, pl. 31 fig. 1.

Anser antarcticus, Vieill. N. Dict. d'Hist. Nat. XXIII. p. 328 (1818); Schl. Mus. Pays Bas Anseres, p. 98 (1866).

Bernicla antarctica, Steph. in Shaw's Gen. Zool. XII. p. 59 (1824); Eyt. Mon. Anat. p. 84 (syn. emend.), pl. II. fig. 5 (1838); Darwin, Voy. 'Beagle,' Birds, p. 134 (1841: Tierra del Fuego: Falkland Isl.); Gray, List B. Brit. Mus. Part III. p. 127 (1844); id. Gen. B. III. p. 127 (1844); Reichenb. Syn. Av. Natatores, pl. 98 figs. 397, 948 (1845); Des Murs in Gay Hist. Nat. Chil., Zool. I. p. 442 (1847); Bibra, Denkschr. K. Ak. Wissensch. V. p. 131 (1853); id. J. f. O. 1855, p. 57; Cass. U. S. Astron. Exp. II. Birds, p. 200, pl. xxiii (1856: Coast of Chili); Gould, P. Z. S. 1859, p. 96 (egg); Scl. P. Z. S. 1860, p. 388; Abbott, Ibis, 1861, p. 159 (Falkland Islands); Phil. & Landb. Arch. f. Nat. pp. 121, 122 (1863); Pelz. Reise Novara, Vög. p. 136 (1865: Guaytecas-Isl.); Scl. P. Z. S. 1867, pp. 320, 334, 339; Phil. & Landb. Cat. Av. Chil. p. 40 (1868); Cunn. Ibis, 1868, p. 127; Burm. P. Z. S. 1872, p. 366; Scl. & Salv. Nomencl. Av. Neotr. p. 128 (1873); iid. P. Z. S. 1876, p. 367, 1878, p. 436; Scl. P. Z. S. 1879, p. 310 (egg), 1880, p. 504; Sharpe, P. Z. S. 1881, p. 13 (Str. Magellan); Scl. & Salv. Voy. Chall. II. Birds, p. 106 (1881: Penguin Isl.: Falkland Isl.); Vincig. Patag. p. 59 (1883); id. Boll. Soc. Geogr. Ital. (2) IX. p. 798 (1884); Burm. An. Mus. Nac. Buenos Aires III. Part X. p. 247 (1888: Patagonia: Tierra del Fuego: Falkland Isl.); id. op. cit. Part XI. p. 320 (1890); James, New List Chil. B. p. 9 (1892); Lataste, Actes Soc. Sci. Chili, III. p. cxii (1893: Str. Magellan); Carbajal. La Patagonia, Part II. p. 282 (1900).

Chenelopex leucoptera (part), Less. Tr. d'Orn. p. 627 [♂] (1831).

Chenelopex antarctica, Less. tom. cit. p. 628 (♀).

Anas ganta, Forst. Descr. Anim. p. 336 (1844).

Tamidiestes antarctica, Reichenb. Av. Syst. Nat. p. ix (1852); Bann. Proc. Acad. Philad. 1870, p. 132; Gray, Handl. B. III. p. 76, no. 10585 (1871).

Chloëphaga antarctica, Licht. Nomencl. Av. Mus. Berol. p. 100 (1854);
 Scl. P. Z. S. 1868, pp. 527, 529 (Falkland Isl.); Scl. & Salv. Ibis,
 1869, p. 284 (Port Otway), 1870, p. 499 (Goods Bay); Cunn. Nat.
 Hist. Str. Magell. pp. 377, 305, 319 (1871); Gigl. Viagg. Magenta,
 pp. 927, 938, 942, 944, 947 (1876); Ridgw. Proc. U. S. Nat. Mus. XII.
 p. 138 (1889).

Bernicla hybrida, Phil. & Landb. Arch. f. Nat. 1863, p. 199 note.

Anser (Brenthus) antarcticus, Reichen. Orn. Centralbl. 1882, p. 36.

Tenidiesthes antarctica, Hein. & Reichen. Nomencl. Mus. Hein. p. 342
 (1890).

Bernicla (Chloephaga) antarctica, Oust. Miss. Sci. Cap Horn, Ois, p. 195
 (1891).

Branta antarctica, Hartert, Kat. Vogelsamml. p. 227 (1891).

Chloëphaga hybrida, Salvad. Cat. B. Brit. Mus. XXVII. p. 130 (1895);
 Schalow, Zool. Jahrb. Suppl. IV. p. 677 (1898: Falkland Isl.);
 Sharpe, Hand-list B. I. p. 213 (1899); P. Martens, Hamb. Magalh.
 Sammelr. Vög. p. 24 (1900: Patagonia: Falkland Islands); Salvad.
 Ann. Mus. Genov. (2) XX, p. 630 (1900: Penguin Rookery, Feb.).

GENERAL DESCRIPTION.

Size.—Adult male. Total length, about 24.0 inches.

Wing, 15.0.

Culmen, 1.5.

Tail, 5.0.

Tarsus, 2.8.

The adult female is about an inch less than the adult male in total length, and the wing is smaller in proportion.

Color.—Adult male. Entirely white.

Bill: Black.

Iris: Brown.

Legs and feet: Yellow.

The adult female is brownish black.

Head: Black.

Forehead with fine white bands; crown to the nape brown; sides of head and face black, with narrow white barring.

Neck: Nape and back of neck brown like the crown. Sides and under neck black, with narrow white barring or bands.

Back: Mantle brownish black. Scapulars brownish black. Lower back, rump and upper tail-coverts white.

Tail: White.

Wings: Lower and median upper wing-coverts, white; greater wing-coverts dark metallic green, each feather tipped with white and with a black band between the green and white parts, the green forming a defined speculum. Primary coverts and primaries black; secondaries white; tertials brownish black like the back.

Lower parts: Breast, abdomen, sides and flanks deep dull black, barred with white. Vent and under tail-coverts white. Under wing-coverts and axillaries white.

Iris: Brown.

Bill: Flesh color.

Feet and legs: Yellowish brown.

Geographical Range.—Patagonia, Tierra del Fuego and the Falkland Islands. Straits of Magellan and on the Pacific Coast north to Chiloe.

The Antarctic Goose was not secured or recorded by the naturalists of the Princeton Expeditions; it is, however, a common bird in portions of the Straits of Magellan, and on the Pacific Coast, as stated above. It does not appear to occur on the Atlantic Coast, but there are many records of it in the interior of Patagonia and Chili, and it also has been observed on the pampas of Argentina. The material in the British Museum has formed a basis for the descriptions given.

"Male: Port Henry.

"Female: Port Henry, February 1879.

"Pull.: Straits of Magellan, November 1879. Eyes dark grey; bill black; legs and feet dark brown." (Sharpe, P. Z. S. 1881, p. 13.)

632, male	}	Penguin Islands, Messier Channel.
633, female		
634, young		
635, young		

"Eyes brown, feet yellow; bill of male black, of female flesh-colour; bill of young dark; feet grey brown; stomachs had pieces of small stones, shells, and sea-weeds."

736, female, Falkland Islands.

"The two goslings (obtained January 1) are just changing their down, and present the black back, brown head, and barred wings and undersurface of the adult female partially developed. The sex is not noted in either of them."

(Sclater & Salvin, on Birds Antarctic America, Voy. H. M. S. 'Chall.'—No. ix. p. 436, 1878.)

"In the afternoon a small party of us landed for a ramble, one of the officers taking his gun with him for the purpose of endeavouring to secure a specimen of a kelp-goose, *Chloephaga antarctica*, several of which were to be seen on the rocks about the bay. This beautiful bird, of which the adult male is snow-white, and the female nearly black, presenting a most striking contrast when standing together, we found common throughout the western part of the Strait, and on the west coast of the continent as far north as Chiloe. It never goes in large flocks, rarely more than five or six being seen in company at a time, and generally but a solitary pair to be observed on one spot. As a rule, we found them exceedingly wary, probably in consequence of being often disturbed by the Indians, who occasionally kill them. Their flesh is quite uneatable at most seasons of the year, owing to the nature of their food, which consists of Molluscs and other marine animals." (Scholl Bay, Smyth's Channel, Straits Magellan, March 14, 1868.) (Cunn. Nat. Hist. Str. Magell. 1871, pp. 318-319.)

"We remarked that the kelp geese, which, as a rule, never wet their feet, except with the damp seaweed of the fore-shore, take to the water as soon as the young are hatched, being probably induced to do so in order the better to protect their goslings from the hawks and rats. The male and female adult birds differ remarkably in plumage; that of the female being almost black, with a few white dots and dashes, whereas the feathers of the male are perfectly white. The sombre color of the female is probably intended as a protection during the hatching time, when she remains almost continuously on the eggs, while the gander does sentry in some conspicuous position adjacent. When at this time of the year a solitary gander is seen standing on a projecting point or headland, it may safely be inferred that his faithful consort is on her nest somewhere within sixty yards. Even under these circumstances it is by no means an easy matter to find the nest; for the black plumage of the female assimilates with the dark wind-blown seaweed and rank grass in which her

nest is made, and she lies so close that she will not stir until almost walked on. While the birds are immature (i. e., less than one year old) the sexes are scarcely distinguishable, the plumage of both male and female being an almost equal mixture of white and black colours." ("Tom Bay," Trinidad Channel, Straits Magellan, January, 1879.) (Cop., Cruise "Alert," 1883, pp. 56-57.)

CHLOËPHAGA MAGELLANICA (Gmelin).

White-winged Antarctic Goose, Brown Ill. p. 100, pl. 40, ♂ (1776: Falkland Isl.).

Oie des terres Magellaniques, D'Aubent. Pl. Enk. IX. pl. 1006.

Oie des îles Malouines, Buff. Hist. Nat. Ois. IX. p. 69 (1783).

Bustard Goose, Lath. Gen. Syn. III. pt. ii. p. 440 (1785).

Magellanic Goose, Lath. tom. cit. p. 443.

Anas magellanica, Gm. Syst. Nat. I. p. 505, ♀ (1788); Lath. Ind. Orn. II. p. 838 (1790); Yarrell, P. Z. S. 1833, p. 3.

Anas leucoptera, Gm. Syst. Nat. I. p. 505 (1788).

Anser leucopterus, Bonn. Enc. Méth. I. p. 113, pl. 30 fig. 1 (1790).

Anser magellanicus, Bonn. tom. cit. p. 117, pl. 29 fig. 1; Schl. Mus. Pays Bas, VI. p. 99 (1866: Falkland Isl.).

Bernicla magellanica, Stephens in Shaw's Gen. Zool. XII. p. 57 (1824); Gray Gen. B. III. p. 607 (1844); Reichenb. Syst. Av. Natatores, pl. 98 fig. 949 (1845); Des Murs in Gay Hist. Chil. Zool. I. p. 443 (1847); Scl. Ibis, 1864, p. 122 (Chili); Pelz. Reise Novara Vög. p. 136 (1865: Chili); Cunningh. Ibis, 1868, p. 127; Scl. & Salv. P. Z. S. 1876, p. 363; Durnf. Ibis, 1878, p. 400 (Chupat Valley, winter visitor, March to Sept.: Lake Colgaupé, resident); Scl. P. Z. S. 1880, p. 502; Lataste, Actes Soc. Sci. Chile, III. p. cxxii (1893: Str. Magellan).

Bernicla leucoptera, Stephens in Shaw's Gen. Zool. XII. p. 58 (1824); Phil. & Landb. An. Un. Chile XXI. p. 427 (1862); iid. Arch. f. Nat. 1863, p. 194.

Chenelopex leucoptera (part) Less. Traité d'Orn. p. 627 (1831).

Chloephaga magellanica, Eyton, Mon. Anat. p. 82, pl. i (1838); Darwin, Voy. Beagle, Birds, p. 134 (1841: Tierra del Fuego: Falkland Isl.); Gray List B. Brit. Mus. Part iii. p. 126 (1844); Hartl. Naumannia, 1853, p. 222 (Valdivia); Licht. Nomencl. Av. Mus. Berol. p. 100 (1854); Scl.

- P. Z. S. 1857, p. 128, 1858, p. 289; Gould, P. Z. S. 1859, p. 96 (egg); Scl. P. Z. S. 1860, p. 387; Abbott, Ibis, 1861, p. 157 (Falkland Isl.); Scl. Ibis, 1864, p. 122; id. & Salv. Ibis, 1868, p. 189 (Straits of Magellan); Scl. P. Z. S. 1868, pp. 527, 529 (Falkland Isl.); Phil. & Landb. Av. Chil. p. 40 (1868); Scl. P. Z. S. 1889, p. 629; id. & Salv. Ibis, 1870, pp. 499, 500 (Elizabeth Isl.); Bann. Proc. Acad. Philad. 1870, p. 131; Gray, Handl. B. III. p. 77, no. 10586 (1871); Cunningh. Nat. Hist. Str. Magell. pp. 98, 130, 153, 184, 266, 297 (1871: Peckett Harbour); Scl. & Salv. Nomencl. Av. Neotr. p. 128 (1873); Gigl. Viagg. Magenta, p. 961 (1876); Garrod, P. Z. S. 1876, p. 198, fig. 2 (skull); Scl. P. Z. S. 1879, p. 310 (eggs); Doering, Expl. al Rio Negro, Zool. Aves, p. 53 (1882: Carhué: Rios Colorado, Negro); Burm. An. Mus. Nac. Buenos Aires, III. Part X. p. 247 (1888); Ridgw. Proc. U. S. Nat. Mus. XII. p. 138 (1889: Elizabeth Isl.); Huds. Idle Days in Patagonia, p. 81 (1893); Salvad. Cat. B. Brit. Mus. XXVII. p. 132 (1895); Sharpe, Hand-list B. I. p. 214 (1899); Salvad. Ann. Mus. Genov. (2) XX. p. 631 (1900: Porto Cook, Rio Pescado, Isola Elizabeth); Martens, Hamb. Magalh. Sammlr. Vög. p. 211 (1900: Patagonia: Straits of Magellan: Falkland Islands).
- Anser (Brenthus) magellanicus*, Reichen. Orn. Centralbl. 1882, p. 37.
- Bernicla (Chloephaga) magellanica*, Outst. Miss. Sci. Cap Horn, Oiseaux, p. 187 (1891).
- Branta magellanica*, Hartert, Kat. Vogelsamml. p. 227 (1891).

GENERAL DESCRIPTION.

Size.—Adult male, P. U. O. C. 7815, near Coy Inlet, Patagonia, 12 November 1896, J. B. Hatcher.

Total length, about 27.0 inches.

Wing, 17.0.

Culmen, 1.5.

Tail, 5.8.

Tarsus, 3.5.

The adult female is about an inch less in total length than the adult male and the wing is 15.3 long. (Adult female, P. U. O. C. 7816, near Coy Inlet, Patagonia, 12 November 1896, J. B. Hatcher.)

Color.—(Adult male cited.) General color white, with a black and white tail, barred on the back with black, the wings chiefly dark, and the flanks heavily barred with black.

Head: Entirely white, with a grey tinge on the crown.

Neck: Entirely white, except the posterior portion of the back, which is barred evenly with black.

Back: Mantle barred evenly in stripes less than a quarter of an inch

FIG. 220.



Chloëphaga magellanica. P. U. O. C. 7815. Adult male. Profile showing black barring on back and clear white breast. About $\frac{1}{4}$ natural size.

wide. Lower back, rump and upper tail-coverts white. Scapulars dark greyish brown.

Tail: Two lateral tail feathers white; the rest dark brown, almost black.

Wings: Lesser median and upper median wing-coverts white. The greater wing-coverts greyish brown on their inner webs, and glossy metallic green on their outer webs, each feather tipped narrowly with white, the whole forming a defined wing speculum. Primaries dark greyish brown; secondaries pure white; tertials dark greyish brown.

Lower parts: *Pure white*, clearly barred on the flanks with black. Lower wing-coverts, axillaries and under tail-coverts pure white.

Bill: Black.

Iris: Dark brown.

Feet: Dusky plumbeous.

Adult female (cited).

Head: Uniform pale snuff brown.

Neck: Uniform in color with the head.

Back: Greyish brown, each feather barred terminally with black and

pale rufous. The first bars obscure, but the last two very distinct, the whole mantle having a barred appearance. Scapulars like the mantle.

The lower back greyish brown; rump and upper tail-coverts deep blackish, with some greenish reflections.

Tail: Deep blackish brown, with greenish reflections.

Wings: Much as in the adult male, but somewhat duller.

Lower parts. — Breast: Barred with black and pale rufous. Each feather is crossed by some six bars of each color, twelve in all, the black bars being almost twice as wide as the rufous ones. Abdomen like the breast, but the rufous bars much paler. Sides and flanks barred like the breast, but the rufous bars replaced by white ones. Vent and under tail-coverts whitish basally, but so strongly vermiculated terminally with blackish brown as to appear dark, unless the feathers are disturbed. Lower wing-coverts and axillaries white.

Bill: Black.

Iris: Dark brown.

Feet and legs: Orange-yellow.

FIG. 221.



Chloëphaga magellanica. P. U. O. C. 7845. Young male in downy plumage. $\frac{1}{4}$ natural size.

Downy young. P. U. O. C. Nos. 7845, ♂; 7846, ♂; 7847, ♀. Rio Coy, Patagonia, 25 January 1898, A. E. Colburn. All of one brood and apparently about two weeks old.

Above: Pale snuff-brown, with two well defined white stripes. Nape of neck pale snuff-brown, the sides and under part of neck white. The top of the head striped snuff-brown, darker in shade than on the neck

and back, and white. Loral region snuff-brown. Sides of head and face white, much shaded with snuff-brown.

Lower parts entirely white of a pearly or greyish tinge.

Bill black. Iris brown. Legs and feet dark plumbeous.

Geographical Range.—Falkland Islands, Tierra del Fuego, the Straits of Magellan and both the coast and interior of Patagonia, reaching into Southern Argentina.

The naturalists of the Princeton Expeditions saw this fine Upland Goose frequently during their travels and the pair cited in full above, the three young and an adult male from the Musco de La Plata, form the material for the descriptions given here.

Dr. Robert O. Cunningham says of these geese: "This species, the Upland goose (*Chloephaga magellanica*) is very plentiful in the eastern portion of the Strait of Magellan, but is very seldom to be seen much to the west of Port Famine. It is also very abundant at the Falkland Islands, and is common on the lower slopes of the Chilian Andes. In the Strait of Magellan it breeds in numbers, on Elizabeth, Sta. Magdalena, and Quartermaster islands. The plumage of both male and female birds, as all those who have had an opportunity of seeing them in the Zoological Society's Gardens will, I think, agree with me, is very handsome—that of the male being white, with narrow black transverse bars on the feathers of the back and breast; while that of the female is chiefly composed of various shades of brown, the feathers being also barred with black. Mr. Darwin, in his notes on this species, remarks that 'at the Falkland Islands they live in pairs and in small flocks throughout the island, being rarely or never found on the sea-coast, and seldom even near fresh-water lakes'—an observation from which my experience widely differs, as I never saw them either at the Falkland Islands or in the Strait, at any considerable distance from the sea; and I frequently observed them on the banks of small lakes of salt and fresh water." Possibly this discrepancy may have resulted from their having been noticed at different periods of the year.

"The first pair of 'Upland Geese' were acquired from Governor Moore, of the Falkland Islands, in 1857; and a second pair was received in 1861. The first young birds were hatched in 1863; and the species has since bred with us with tolerable regularity, as will be seen by the following list.

"Dates of Hatching of Upland Geese. (In Zoological Gardens, London.)

1863. May 4th.	1872. April 22nd.
1865. April 30th.	1874. " 26th.
1868. May 25th.	" May 5th.
1869. " 21st.	" " 17th.
1870. " 8th.	1875. April 29th.
1871. April 23rd.	1878. June 15th."

(P. L. Sclater, P. Z. S. pp. 502-503, 1880.)

"The Governor of the Straits of Magellan, Capt. Gomez, gave us two goslings of this species alive; but when we entered a warmer climate they both died, just as they were getting their feathers." (Feb. 3, 1903.) (M. J. Nicoll, Orn. Jour. Voy. round World, Ibis, Jan. 1904, p. 43.)

"Among the most distinguished in appearance and carriage of the handsome exotic species is the Magellanic goose, one of the five or six species of the Antarctic genus *Chloephaga*, found in Patagonia and the Magellan Islands. One peculiarity of this bird is that the sexes differ in colouring, the male being mostly white, whereas the prevailing colour of the female is a ruddy brown,—a fine rich colour set off with some white, grey, intense cinnamon, and beautiful black mottlings. Seen on the wing the flock presents a somewhat singular appearance, as of two distinct species associating together, as we may see when by chance gulls and rooks, or shel-drakes and black scoters, mix in one flock.

"This fine bird has long been introduced into this country, and as it breeds freely it promises to become quite common. I can see it any day; but these exiles, pinioned and imprisoned in parks, are not quite like the Magellanic geese I was intimate with in former years, in Patagonia and in the southern pampas of Buenos Ayres, where they wintered every year in incredible numbers, and were called 'bustards' by the natives. To see them again, as I have seen them, by day and all day long in their thousands, and to listen again by night to their wild cries, I would willingly give up, in exchange, all the invitations to dine which I shall receive, all the novels I shall read, all the plays I shall witness, in the next three years; and some other miserable pleasures might be thrown in. Listening to the birds when, during migration, on a still frosty night, they flew low, following the course of some river, flock succeeding flock all night long; or heard from a herdsman's hut on the pampas, when thou-

sands of the birds had encamped for the night on the plain hard by, the effect of their many voices (like that of their appearance when seen flying) was singular, as well as beautiful, on account of the striking contrasts in the various sounds they uttered. On cold nights they are most loquacious, and their voices may be heard by the hour, rising and falling, now few, and now many taking part in the endless confabulation—a talkee-talkee and concert in one; a chatter as of many magpies; the solemn, deep *honk-honk*, the long, grave note changing to a shuddering sound; and, most wonderful, the fine silvery whistle of the male, steady or tremulous, now long and now short, modulated a hundred ways—wilder and more beautiful than the night-cry of the widgeon, brighter than the voice of any shore bird, or any warbler, thrush or wren, or the sound of any wind instrument.

"It is probable that those who have never known the Magellanic goose in a state of nature are best able to appreciate its fine qualities in its present semi-domestic state in England. At all events the enthusiasm with which a Londoner spoke of this bird in my presence some time ago came to me rather as a surprise. It was at the studio in St. John's Wood of our greatest animal painter, one Sunday evening, and the talk was partly about birds, when an elderly gentleman said that he was pleased to meet some one who would be able to tell him the name of a wonderful bird he had lately seen in St. James's Park. His description was vague; he could not say what its colour was, nor what sort of beak it had, nor whether its feet were webbed or not; but it was a large tall bird, and there were two of them. It was the way this bird had comported itself towards him that had so taken him. As he went through the park at the side of the enclosure, he caught sight of the pair some distance away on the grass, and the birds, observing that he had stopped in his walk to regard them, left off feeding, or whatever they were doing, and came to him. Not to be fed—it was impossible to believe that they had any such motive; it was solely and purely a friendly feeling towards him which caused them immediately to respond to his look, and to approach him, to salute him, in that way. And when they had approached to within three or four yards of where he stood, advancing with a quiet dignity, and had then uttered a few soft, low sounds, accompanied with certain graceful gestures, they turned and left him; but not abruptly, with their backs towards him—oh, no, they did nothing so common; they were not like other birds—they

were perfect in everything; and, moving from him, half paused at intervals, half turning first to one side then the other, inclining their heads as they went. Here our old friend rose and paced up and down the floor, bowing to this side and that and making other suitable gestures, to try to give us some faint idea of the birds' gentle courtesy and exquisite grace. It was, he assured us, most astonishing; the birds' gestures and motions were those of a human being, but in their perfection immeasurably superior to anything of the kind to be seen in any Court in Europe or the world.

"The birds he had described, I told him, were no doubt Upland Geese.

"'Geese!' he exclaimed, in a tone of surprise and disgust. 'Are you speaking seriously? Geese! Oh, no, nothing like geese—a sort of ostrich!'

"It was plain that he had no accurate knowledge of birds; if he had caught sight of a kingfisher or green woodpecker, he would probably have described it as a sort of peacock. Of the goose, he only knew that it is a ridiculous, awkward creature, proverbial for its stupidity, although very good to eat; and it wounded him to find that any one could think so meanly of his intelligence and taste as to imagine him capable of greatly admiring any bird called a goose." (W. H. Hudson, *Birds and Man*, pp. 197–202, 1901.)

"And I will conclude this chapter with an incident related to me many years ago by a brother who was sheep-farming in a wild and lonely district on the southern frontier of Buenos Ayres. Immense numbers of upland geese in great flocks used to spend the cold months on the plains where he had his lonely hut; and one morning in August in the early spring of that southern country, some days after all the flocks had taken their departure to the south, he was out riding, and saw at a distance before him on the plain a pair of geese. They were male and female—a white and a brown bird. Their movements attracted his attention and he rode to them. The female was walking steadily on in a southerly direction, while the male, greatly excited, and calling loudly from time to time, walked at a distance ahead, and constantly turned back to see and call to his mate, and at intervals of a few minutes he would rise up and fly, screaming, to a distance of some hundreds of yards; then finding that he had not been followed, he would return and alight at a distance of forty or fifty yards in advance of the other bird, and began walking on as before. The female had one wing broken, and, unable to fly, had set

out on her long journey to the Magellanic Islands on her feet; and her mate, though called to by that mysterious imperative voice in his breast, yet would not forsake her; but flying a little distance to show her the way, and returning again and again, and calling to her with his wildest and most piercing cries, urged her still to spread her wings and fly with him to their distant home." (W. H. Hudson, *Birds and Man*, pp. 209-210, 1901.)

"After leaving Punta Arenas, we landed at Elizabeth Island, which is without trees, but covered with grass, and is likely soon to be occupied as a sheep-run. The island is the breeding-place of large numbers of Wild Geese (*Chloephaga Patagonica*). The geese were very abundant, and a wild-geese chase in Elizabeth Island is a very different matter from one at home. When I had shot nine geese I found that I had no light task before me in carrying them to the boat at the end of the island, over the soft and yielding soil. Goose-shooting in the Falkland Islands similarly soon satiates the sportsman, who finds himself early in the day with a heavier bag than he can stagger under.

"The geese at Elizabeth Island showed some wariness, and some little trouble had to be taken in order to get within shot of them, unless they were met with in long grass. When on the alert, they settled on the summits of the hillocks and ridges, in order to have a wide view of the enemy. One had to creep up under cover of the hill-slopes, and make a final rush forwards toward the flock. The birds are startled by this, and it is some time before they can make up their minds to fly." (Moseley, *Notes, Natur. Chall.* 1879, pp. 551-552.)

"The geese at the Falkland Islands are far tamer than those at Elizabeth Island, and seem not to understand a gun, though they have been shot at now for a long period. The Falkland Islands, however, were never inhabited by any savage race, and the birds have not had time to learn. The other birds in Magellan's Straits, which also occur at the Falklands, as for example the Loggerhead Ducks, show the same contrast in their wildness. They have been hunted for generations by the hungry Fuegians.

"The young wild geese at Elizabeth Island, whilst still covered with black down, run amongst the grass with astonishing quickness, and are as difficult to shoot as rabbits. It is no easy task to catch them by running. A brood when met with separates, every gosling running off in a different direction. The young birds dodge behind a tuft of grass, and

squatting closely under it are at once safe. It is quite impossible to find them, and a brood of ten or twelve goslings, as large almost as full grown fowls, disappears as if by magic. The goslings can only be caught by the pursuer keeping his eye on one bird only, and running after it at the utmost possible speed. I had no idea that goslings would be able to secure their safety so completely. No doubt a terrier would find them one after another. They are far better to eat than the full grown geese." (Moseley, Notes, Natur. Chall. 1879, pp. 552-553.)

"Flocks of geese were to be seen there feeding on the grass close to the houses, looking just like farm-yard geese. The birds take no notice of a gun, but I soon found that they were very quick at seeing a bolas when I carried one, well-knowing that they were going to be molested. I could not catch one with the bone bolas, though I came very near it, and should have succeeded with a little practice. The bone bolas comes curiously near that of the Esquimaux in structure. The Esquimaux bolas, used also for catching birds, has more than three balls, and these are made of ivory." (Darwin Harbor, Falkland Islands, January 3 to February 7, 1876.) (Moseley, Notes, Natur. Chall. 1879, p. 558.)

CHLOEPHAGA INORNATA (King).

Anser inornatus, King, P. Z. S. 1830-31, p. 15, Straits of Magellan.

Anas inornatus, Less. Compl. Buff. Ois. IX. p. 527 (1837).

Chloephaga magellanica, Fraser (nec Gm.) P. Z. S. 1843, p. 118 (Chili); Scl. P. Z. S. 1871, p. 700 (Chili); Scl. & Salv. Nomencl. Av. Neotr. p. 128 part (1873); Barrows, Auk, I. p. 273 (1884: Carhué).

Bernicla magellanica, Des Murs (nec Gm.), in Gay, Hist. Chil. Zool. I. p. 443 (1847: Chiloe); Cass. U. S. Astron. Exped. II. Birds, p. 201; pl. XXIV (1856: Chili); Huds. P. Z. S. 1872, p. 549 (Rio Negro); Scl. P. Z. S. 1877, p. 818, 1880, p. 704 (Patagonia).

Bernicla inornata, Des Murs in Gay's Hist. Chil. Zool. I. p. 444 (1847); Phil. & Landb. An. Univ. Chile, XXI. p. 436 (1862); iid. Arch. f. Nat. p. 199 (1863); Scl. & Salv. P. Z. S. 1876, p. 367 note (Straits of Magellan); Burm. An. Mus. Nac. Buenos Aires, III. part XI. p. 320 (1890).

Chloephaga inornata, Bonap. C. R. xliii. p. 648 (1856); Eyton, Syn. Anat. p. 22 (1869); Gray, Handl. B. III. p. 77, no. 10588 (1871); Scl. & Salv. Nomencl. Av. Neotr. p. 128, pt. (1873); Sharpe, Zool.

Ereb. & Terr. p. 37, pl. 30 (1875); Salvad. Cat. B. Brit. Mus. XXVII. p. 134 (1895); Schalow, Zool. Jahrb. Suppl. IV. p. 677 (1898: Dawson Isl.: Punta Arenas, Feb.); Sharpe, Hand-list B. I. p. 214 (1899); Martens, Hamb. Magalh. Sammelr. Vög. p. 24 (1900: Straits of Magellan); Salvad. Ann. Mus. Genov. (2) XX. p. 631 (1900: Punta Arenas, May).

Chloephaga picta, Bp. C. R. xliii. p. 648 (1856); Bann. Proc. Acad. Philad. 1870, p. 131; Gigl. Viagg. Magenta, p. 904 (1876).

Bernicla dispar, Phil. & Landb. An. Univ. Chile, XXI. p. 427 (1862); iid. Arch. f. Nat. 1863, p. 190; Scl. Ibis, 1864, p. 122 (Chili); Pelz. Reise Novara, Vög. p. 137 (1865: Chili); Phil. & Landb. Cat. Av. Chil. p. 40 (1868); Burm. P. Z. S. 1872, p. 366 (Sierra Tinta, Rio Negro); Leybold, Excurs. Pampas Argentinas, p. 20 (1873); Scl. & Salv. P. Z. S. 1876, p. 364; Scl. P. Z. S. 1880, p. 503; Burm. An. Mus. Nac. Buenos Aires, Part X. p. 247 (1888); Scl. & Huds. Argent. Orn. II. p. 123 part (1889); James, New List Chil. B. p. 9 (1892); Lataste, Actes Soc. Sci. Chil., III. p. CXXII (1893).

Bernicla antarctica (error), Burm. La Plata Reise, II. p. 514 (1861).

Chloephaga dispar, Scl. Ibis, 1864, p. 122; id. P. Z. S. 1867, p. 320, 334 (Chile); Eyton, Mon. Anat. p. 29 (1869); Gray, Handl. B. III. p. 77, no. 10587 (1871).

Anser magellanicus, (part), Schl. Mus. Pays Bas. VI. Anseres, p. 99 (1866).

Anser (*Brenthus*) *dispar* Reichen. Orn. Centralbl. 1882, p. 37.

Bernicla (*Chloephaga*) *dispar*, Oust. Miss. Sci. Cap Horn, Oiseaux, p. 311 (1891).

Bernicla (*Chloephaga*) *inornata*, Oust. tom. cit. p. 213.

GENERAL DESCRIPTION.

Size.—7817, P. U. O. C., adult male, near Coy Inlet, Patagonia, 12 November 1896, J. B. Hatcher.

Total length, 30 inches.

Wing, 17.

Culmen, 1.4.

Tail, 7.25.

Tarsus, 3.5.

The female is a little smaller than the male.

Color.—(Adult male cited above.) General color: similar to *C. magellanica*, but with a barring on the under parts of pure black, varying in extent, often leaving little unbroken white.

Head: Pure white. In immature birds there is a tendency to grey shading upon the crown.

Neck: White for the part nearest the head and for a varying distance; then barred with concentric rings of black, very narrow at first, but widen-

FIG. 222.



Chloephaga inornata, adult male, 7817, P. U. O. C. Profile showing the barring of black on the breast as well as on the back. About $\frac{1}{3}$ natural size.

ing till they are a fifth of an inch broad. These black bars or rings go entirely around the lower portion of the neck from the point where they begin.

Back: The mantle is barred evenly with stripes of black and white, which, starting almost as vermiculations, where they begin on the neck, gradually become a quarter of an inch wide. This barring is achieved by feathers which are each barred with from four to six areas of black and white in sharp contrast. The lower back and rump are pure white, there are several dusky feathers mixed among the pure white upper tail-coverts; the lower tail-coverts are white. The scapulars are dark greyish brown.

Tail: The tail is *wholly black*; the outer white rectrices in the tail of *magellanica* will always serve to determine the adult males of the two species from each other.

Wings: The lesser and median coverts pure white; the greater wing-coverts being greyish brown on the inner webs and having a bronzy greenish gloss with a metallic sheen on the outer webs; each feather is tipped with a narrow terminal margin of white; the whole forming a well-defined alar speculum. Primaries dark greyish brown; secondaries pure white; tertials dark greyish brown.

Lower parts: Including the breast, the lower parts are barred evenly black and white, except on the belly and about the vent. The lower wing-coverts and axillaries are white; the under tail-coverts are nearly all white, but there are a few greyish brown feathers to be discovered on careful examination.

Bill: Black.

Iris: Dark hazel-brown.

Feet: Very dark lead-color, almost black.

Adult female: The adult female is very like the same sex in *C. magellanica*, but has the head and neck light lead-color; there is no ruddy tinge as in the allied bird.

Two female birds which are referred to this species, 7819, 7820, P. U. O. C., both young birds of the year more than half grown and fully in feather, present an appearance very like the adult female of *C. magellanica*, except that the colors are not nearly so ruddy or intense, and the characteristic lead-colored head and neck are noticeable. These birds were collected near Rio Coy, Patagonia, on January 24, 1898. In this same region adults were common, though no females were collected. An adult male in worn plumage was taken the next day and is only to be referred to this species. It is 7818, P. U. O. C., and is more barred beneath than is usual in *inornata*. The bird is notable in having one white lateral tail feather on one side of the tail; there is no white feather on the other side. The bird is not moulting and the normal number of rectrices are present. There is a slight admixture of vermiculated feathers among the under tail-coverts, but the upper tail-coverts are pure white.

Geographical Range.—Central and southern Chili; the Straits of Magellan; southern Argentina including all Patagonia. Breeds in the lakes of the interior as well as on or near the sea coast of eastern Patagonia (Hatcher in MS. notes).

The four geese taken by the naturalists of the Princeton Expeditions,

which have been discussed in some detail in the foregoing descriptions, are all that were sent home in the collections, though this was a very common species in several localities where the work of the expeditions was prosecuted. But even this meagre material gives much ground for reflection and suggests possibilities in the way of alliance between the form under consideration and the allied species known as *magellanica*. The two forms are almost alike in size; the males differ chiefly in the amount of black barring on the lower surface; the tail in the male sex offers a diagnostic difference in that that of *magellanica* is bordered with white rectrices, the center ones being dark; while the tail of *inornata* in the adult male is wholly dark, with no relieving outer rectrices. The females differ more than do the males, if the lead-colored head and neck of *inornata* is an unvarying characteristic. For even in the small series dealt with the two males, which can only be referred to this form, vary in the direction of *magellanica*, one, 7818, having a white external tail feather on one side of the tail, and the other having the lower tail-coverts pure white. Moreover in a large series of birds, only to be considered as true *magellanica*, the number of bordering white rectrices is quite variable, and consequently the number of dark rectrices varies also. The normal number, fourteen in this genus, is arranged, so far as color is concerned, in ever differing proportions, but is usually symmetrical. Thus the tail of the bird used by Count Salvadori in his description had but the four central feathers greyish black (see Cat. Birds Brit. Mus. XXVII, p. 133, near the bottom), while the bird used in this work has but the two outer rectrices on either side white. Consequently, there may be ten black feathers in the tail of a given individual of *magellanica* with four white ones, or ten white ones with four black ones, and a consistent symmetrical variation is to be expected between these two extremes. The recent close relationship between the two species, *magellanica* and *inornata*, is perfectly evident from what has been presented, and it is of further interest to consider that the extremes now seem to have some difference in their geographical range; for while the two species both occur and both breed in the Straits of Magellan region, yet, on the whole, *inornata* is a western form of a recently separated species and conversely *magellanica* is an eastern form as now existing. There are fifteen *magellanica* in the series of skins in the British Museum and five of these, one third, are from the Falkland Islands; there are six birds in the *inornata* series, five of which are from Chili and one from the Straits of Magellan.

Apparently, *magellanica* has not been obtained in western South America or on the sea coasts of that country; nor has *inornata* been recorded from the Falkland Islands. While the two forms probably intergraded in comparatively recent times, it does not seem that they do at present even on the grounds of variability shown, and the distribution of the two kinds of geese under discussion is chiefly interesting as a record of their present range, which in the future may very probably crystallize into each species occupying a definite region to the exclusion of the other, a condition already prevailing on the outer boundaries of the present range of both.

CHLOËPHAGA RUBIDICEPS Sclater.

Chloephaga poliocephala (part), Gray, List B. Brit. Mus. Part III. p. 217 (1844).

Bernicla inornata, Gray (nec King), Voy. Ereb. & Terror, Birds, pl. 24 (1846).

Chloephaga rubidiceps, Scl. P. Z. S. 1860, pp. 387, 415, pl. CLXXIII (Falkland Isl.), 1861, p. 46; Abbott, Ibis, 1861, p. 158 (Falkland Isl.); Scl. Ibis, 1864, p. 123; id. P. Z. S. 1869, p. 629; Gray, Handl. B. III. p. 77, no. 10590 (1871); Scl. & Salv. Nomencl. Av. Neotr. p. 128; Sharpe, Voy. Ereb. & Terr. Birds, p. 37 (1875); Salvad. Cat. B. Brit. Mus. XXVII, p. 136 (1895); Sharpe, Hand-list, B. I. p. 214 (1899); Martens, Hamb. Magalh. Sammlr. Vög. p. 24 (1900: Falkland Islands).

Anser rubidiceps, Schl. Mus. Pays Bas, VI. Anseres, p. 102 (1866).

Chloetrophus rubidiceps, Bann. Proc. Acad. Philad. 1870, p. 131.

Bernicla rubidiceps, Scl. & Salv. P. Z. S. 1876, p. 367; Scl. P. Z. S. 1880, p. 503; Burm. An. Mus. Nac. Buenos Aires, III. Part X. p. 247 (1888: Falkland Isl.); Scl. P. Z. S. 1892, p. 472.

Anser (Brenthus) rubidiceps, Reichen. Orn. Centralbl. 1882, p. 36.

Bernicla (Chloephaga) rubidiceps, Oust. Miss. Sci. Cap Horn, Oiseaux, p. 312 (1891).

GENERAL DESCRIPTION.

Size.—Total length, 23 inches.

Wing, 13.5.

Culmen, 1.5.

Tail, 4.5.

Tarsus, 2.5.

Color.—General color; brown in varying shades, with conspicuous areas of pure white on the shoulders, wings and abdomen.

Head: Bright cinnamon.

Neck: The upper part bright cinnamon like the head, shading into rufous on the lower part and into the breast, banded at the extreme with narrow blackish bars.

Back: Mantle rufous; this is banded like the neck with narrow blackish bars. Lower back, rump and upper tail-coverts shining, polished black.

Tail: Black.

Wings: Smaller and median upper coverts white; under wing-coverts white; greater upper coverts metallic green, with narrow white borders at their ends; primaries and their coverts black; secondaries white; tertials and scapulars brownish grey.

Lower parts: The neck as described; the breast, sides and flanks chestnut rufous, barred with black, the barring becoming broader on the flanks and better defined; abdomen white; lower tail-coverts cinnamon chestnut, with an admixture of black feathers in some birds.

Bill: Black.

Irides: Dark brown.

Feet: Yellow, with a washing of dusky or blackish on the external surface.

The female is smaller than the male, but is almost as highly colored.

Young birds of the year are not unlike adults, but are generally duller in tone and lack the metallic green luster of the wing speculum, present in the adults.

Geographical Range.—Falkland Islands.

This form was not obtained by the naturalists of the Princeton Expeditions. The series of birds in the British Museum and the type of the species described by Dr. Sclater have formed the basis for the foregoing descriptions. The bird has so far been found only in the Falklands and bears much the same relationship to *poliocephala*, restricted almost entirely to the Straits and the mainland, that *C. magellanica* does to *C. inornata*.

"Two pairs of this Goose were obtained from the Falklands in 1860, but they did not breed until 1865. We have unfortunately now lost our whole stock of this bird."

Dates of Hatching of Ruddy-headed Geese. (In the Zoological Gardens, London.)

1865. April 30th.	1868. May 1st.
1866. May 8th.	" " 25th.
" June 5th.	1869. June 6th.
1867. May 18th.	1870. May 11th.
" June 4th.	

(P. L. Sclater, P. Z. S. pp. 503-504, 1880.)

CHLOËPHAGA POLIOCEPHALA Gray.

Bernicla inornata, Gray (nec. King), Gen. B. III, p. 607, pl. 165 (1844); Cass. U. S. Expl. Exped. Birds, p. 337 (1858: Tierra del Fuego & Falkland Isl.) ; Scl. Ibis, 1859, p. 327.

Chloephaga poliocephala, Gray, List B. Brit. Mus. Part III. p. 127 part (1844: Island of Chiloe); Scl. P. Z. S. 1857, p. 128, 1858, p. 290; Gould, P. Z. S. 1859, p. 96; Scl. t. c. p. 206 (incubation); id. P. Z. S. 1861, p. 46 (Falkland Isl.); Abbott, Ibis, 1861, p. 159 (Falkland Isl.); Scl. Ibis, 1864, p. 122; id. P. Z. S. 1867, p. 335; Scl. & Salv. Ibis, 1868, p. 189 (Oazy Harbour); Cunningh. Ibis, 1869, p. 233; Scl. P. Z. S. 1869, p. 629 (breeding); Eyton, Syn. Anat. p. 29 (1869); Scl. & Salv. Ibis, 1870, p. 499 (Port Grappler); Scl. P. Z. S. 1871, p. 261 note; Gray, Handl. B. III. p. 77, no. 10589 (1871); Cunningh. Nat. Hist. Str. Magell. pp. 184, 185 (1871); Scl. & Salv. Nomencl. Av. Neotr. p. 128 part (1873); iid. P. Z. S. 1878, p. 436 (Gray Harbour: Tom Harbour); Gigl. Viagg. Magenta, pp. 933, 937, 943, 946 (1876); Scl. P. Z. S. 1881, p. 813; Doering, Expl. al Rio Negro Zool. Aves, p. 53 (1882); Shufeldt, Proc. U. S. Nat. Mus. X. p. 383 (1887); Salvad. Cat. B. Brit. Mus. XXVII, p. 137 (1895); Schalow, Zool. Jahrb. Suppl. IV. p. 677 (1898); Sharpe, Hand-list B. I. p. 214 (1899); Martens, Hamb. Magalh. Sammelr. Vög. p. 24 (1900: Patagonia: Falkland Islands).

Bernicla poliocephala, Scl. Ibis, 1859, p. 328; Pelz. Reise Novara, Vög. p. 136 (1865: Chiloe); Burm. P. Z. S. 1872, p. 366 (Bahia Blanca); Huds. t. c. p. 549 (Rio Negro); Scl. & Salv. P. Z. S. 1876, p. 366; Durnf. Ibis, 1877, p. 190 (Buenos Aires, winter), 1878, p. 400 (Chupat Valley, winter, March to Sept.: Lake Colgaupe, breeds); Scl. P. Z. S.

- 1880, p. 503; Scl. & Salv. Voy. Chall. II. Birds, p. 107 (1881); Burm. An. Mus. Nac. Buenos Aires, III. part X, p. 247 (1888: Patagonia); Scl. & Huds. Argent. Orn. III. p. 124 (1889); Tristr. Cat. Coll. B. p. 51 (1889: Puerto Bueno); James, New List Chil. B. p. 9 (1892); Scl. P. Z. S. 1892, p. 472 (breeding).
- Bernicla chiloensis*, Phil. & Landb. An. Univ. Chile, XXI. p. 427 (1862); iid. Arch. f. Nat. 1863, p. 149 (Chiloe); Scl. Ibis, 1864, p. 421; Phil. & Landb. Cat. Av. Chil. p. 40 (1868).
- Anser poliocephalus*, Schl. Mus. Pays Bas VI. Anseres, p. 101 (1866). Chestnut-breasted Goose, Cunningh. Ibis, 1868, p. 127.
- Chloetrophus poliocephalus*, Bann. Proc. Acad. Philad. 1870, p. 131.
- Anser (Brenthus) poliocephalus*, Reichen. Orn. Centralbl. 1882, p. 36.
- Branta poliocephala*, Hartert, Kat. Vogelsamml. p. 227 (1891).
- Bernicla (Chloephaga) poliocephala*, Oust. Miss. Sci. Cap Horn, Oiseaux, p. 192 (1891).

GENERAL DESCRIPTION.

Size.—7814, P. U. O. C., adult male, Pacific slope of Cordillera, Patagonia, 8 March, 1897. J. B. Hatcher.

Total length, about 23.50 inches.

Wing, 13.4.

Culmen, 1.15.

Tail, 5.1.

Tarsus, 2.7.

The female is a little smaller than the male.

Color.—General color; much as in *rubidiceps*, save that the head and neck are distinctly pale lead-color.

Head: Pale lead-color; the forehead and eyelids decidedly white and the upper part of the head paler.

Neck: Pale lead-color, rather darker than the head and the longer feathers of the nape strongly tinted with chestnut. The lower of these feathers, those nearest the back, are sometimes faintly vermiculated or barred with blackish brown. The lead-colored neck does not shade into the color of the breast or upper back, but terminates definitely.

Back: Upper back bright chestnut, each feather more or less vermiculated with dusky; this does not show plainly unless the feathers are lifted or ruffled, as the area of chestnut is terminal on each feather for more

than half an inch and, overlapping each other, the slight barring is almost altogether obscured. Lower back greyish brown; rump and upper tail-coverts lustrous black.

Tail: Black of a velvety character.

Wings: The lesser and median coverts are white; greater coverts metallic coppery green, each feather bordered at its terminal edge with a narrow white margin, the whole forming a characteristic wing-speculum;

FIG. 223.



Chloëphaga poliocephala. P. U. O. C. 7814. Adult male. Profile of head and neck, with the darker body showing in contrast. About $\frac{1}{3}$ natural size.

the tertials are greyish brown, with an olive shade and the scapulars grey, with a strong chestnut tinge, more or less vermiculated near the ends; primaries and their coverts dusky or blackish; secondaries white, more or less shaded and marked with brownish; lower wing-coverts white.

Lower parts: Breast like the upper back, bright chestnut and with similar obscure vermiculations; this color terminates abruptly and definitely on the white of the abdomen and here the barring of the chestnut feathers is conspicuous; the abdomen is pure white; the sides are white barred with black and washed in parts with chestnut; the flanks are black like the rump and the under tail-coverts are chestnut, with an admixture of dusky feathers.

Bill: Black.

Iris: Dark brown (Hatcher).

Legs: Orange (Hatcher).

Feet: Dusky (Hatcher).

The adult female is similar to the male in appearance.

Young birds of the year are duller in color, but similar in pattern; the suffusion of the upper parts is noticeable.

Geographical Range.—Southern Chili and Argentina, including the whole of Patagonia. It is known to breed here and is probably resident throughout the year. It breeds on Chiloe Island and is rare or casual in the Falkland Islands.

"Iris black; bill black; tarsi and toes black in front, orange behind; webs black.

"This beautiful goose was not uncommon at the western extremity of the Straits of Magellan and in Smythe's Channel. It was not easy to approach." (M. J. Nicoll, Orn. Jour. Voy. round World, Ibis, Jan. 1904, p. 49.)

643, male }
644, female } Gray Harbour.

"Eyes brown, feet and legs yellow and black; stomachs had grass and berries."

658, female }
659, female }
658a, young } Tom Harbour.
658b, young }

"Eyes brown, bill black, feet yellow and black." (Sclater & Salvin, on Birds Antarctic America, Voy. H. M. S. 'Chall.'—No. ix. p. 436, 1878.)

"Female: Needham Cove, Trinidad Channel, February 28, 1879. Iris dark brown; bill horn-colour; legs black in front, orange at back.

"Male: Alert Bay, December 3, 1879. Bill black; eyes dark brown; legs orange, black down the front.

"Female pull.: Fort Henry, December 3, 1879. Eyes brown: legs dark grey; bill horn-colour." (Sharpe, P. Z. S. 1881, p. 13.)

"The first examples of this Goose were received in 1833. It bred frequently in the Gardens from 1852 to 1869, when we unfortunately lost most of our stock. We have quite lately succeeded in obtaining some newly imported birds, and hope now to begin breeding them again."

Dates of Hatching of Ashy-headed Geese. (In the Zoological Gardens, London.)

1852. June 9th.	1860. May 27th.
1854. May 24th.	1865. " 25th.
1857. " 23rd.	1867. " 23rd.

1858. June 7th.

1868. June 25th.

1859. May 21st.

1869. " 1st.

" June 2nd.

(P. L. Sclater, P. Z. S., p. 503, 1880.)

"On our arrival [Oazy Harbour, Straits of Magellan], early in the afternoon, two officers, who had preceded us, came on board, bringing with them a specimen of the heron mentioned above as seen at Sandy Point, as well as a beautiful species of goose, quite new to us. This bird, the *Chloephaga poliocephala*, is considerably smaller than the upland goose (*C. Magellanica*), and its plumage is exceedingly handsome, the wings being finely bronzed, and a broad band of rich chestnut passing across the breast. It appears to be common in the eastern portion of the Strait, where we observed it to be tamer than the upland goose, and we also met with it on several occasions in the Western Channels, where I only saw one pair of the *C. Magellanica*. Its flesh is very good, and possesses a more delicate flavour than that of the other species." (Cunn. Nat. Hist. Straits Magellan, p. 184, 1891.)

Subfamily *ANATINÆ*.

Salvad. Cat. Bds. Brit. Mus. XXVII. p. 142 (1895); Sharpe, Hand-List Bds. I. p. 214 (1899).

Genus *ANAS* Linnæus.

Type.

Anas Linn. S. N. i. p. 134 (1766); Salvadori, Cat. Bds. Brit.

Mus. XXVII. p. 227 (1895); Sharpe, Hand-list Bds. I.

p. 216 (1899) *A. boscas.*

Anassus Rafin. Analyse, p. 72 (1815); Bosch, Sw. Fauna

Bor.-Amer., Birds, p. 442 (1831) *A. boscas.*

Geographical Range. — Throughout the world.

ANAS SPECULARIS King.

Anas specularis, King, Zool. Journ. IV. p. 98 (1828: Straits of Magellan);

Eyton, Mon. Anat. p. 138 (1838); Jard. & Selb. Illustr. Orn. IV. pl.

40 (1840); Hartl. Verz. Ges. Mus. p. 119 (1844); Gray, List B. Brit.

Mus. Part III. p. 136 (1844: Str. Magellan); id. Gen. B. III. p. 615

- (1845); Des Murs in Gay's Hist. Chil. Zool. I. p. 450 (1847); Hartl. Naum. 1853, pp. 217, 222 (Valdivia); Cass. U. S. Astron. Exped. Birds, p. 202 (1856); Pelz. Reise Novara, Vög. p. 138 (1865: Chili); Scl. P. Z. S. 1867, p. 335 (Chili); Phil. & Landb. Cat. Av. Chil. p. 42 (1868); Scl. & Scl. P. Z. S. 1876, p. 380; Scl. P. Z. S. 1880, p. 519; Reichen. Orn. Centralbl. 1882, p. 19; Burm. An. Mus. Nac. Buenos Aires, Part X. p. 248 (1888: Str. Magellan); Tristr. Cat. Coll. B. p. 49 (1889); James, New List Chil. B. p. 9 (1892); Salvad. Cat. B. Brit. Mus. XXVII. p. 215 (1895); Lane, Ibis, 1897, p. 192 (Rio Pilmaiguen: Rio Bueno); Schalow, Zool. Jahrb. Suppl. IV. p. 676 (1898: Punta Arenas, Feb.); Sharpe, Hand-list B. I. p. 217 (1899); Carbajal, La Patagonia, Part II. p. 282 (1900); Martens, Hamb. Magalh. Sammelr. Vög. p. 24 (1900: Straits of Magellan).
- Anas chalcoptera*, Kittl. Mém. Acad. St. Pétersb. II. p. 471, pl. 5 (1835); Fraser, P. Z. S. 1843, p. 119 (Colchagua, rare); Reichenb. Syn. Av. Natatores, pl. 100, figs. 2766-67 (1850); Licht. Nomencl. Av. Mus. Berol. p. 101 (1854: Chili); Gray, Handl. B. III. p. 82 no. 10650 (1871); Scl. & Salv. Nomencl. Av. Neotr. p. 129 (1873).

GENERAL DESCRIPTION.

Size.—Total length, about 21.5 inches.

Wing, 10.4.

Culmen, 1.9.

Tail, 4.7.

Tarsus, 1.7.

Color.—General color; brown in varying shades, with areas of white on face and neck, and with darker wings, having fine specula of metallic purple.

Head: Dull brown, darkening into blackish on the forehead and crown. In front of the eye there is a large white spot on the face.

Neck: Brown like the head; the chin and lower throat white, which color spreads out lower down on the sides of the neck, leaving only a narrow area of brown on the nape.

Back: Deeper brown than the neck and becoming glossy on the mantle and lower back; each feather of the upper back, and some of those of the mantle proper, margined with paler dull brown like that of the neck. The lower back is deepest in color, approaching black. This color shades into olive-greyish on the rump and upper tail-coverts.

Tail : Above dull blackish, shaded with grey, the feathers below being ashy grey.

Wings : Black with a decided green luster ; there is a metallic purple speculum on the secondaries, each feather at this point having a sub-terminal band of velvety black, rather more than half an inch wide, bordered by a clear white margin, a quarter of an inch broad. This speculum, if

FIG. 224.



FIG. 225.



Anas specularis, male, P. U. O. C. 8931. Rio Negro, Argentina, March, 1898. Profile showing color pattern on head and face.

The same : Rio Negro, Argentina, March, 1898. Bill and head from in front. About $\frac{1}{3}$ natural size.

viewed from well in front, appears metallic green with coppery shades. The primaries are dusky brownish, almost black. The greater coverts are dark greyish brown. The under wing-coverts velvety black and the axillaries white.

Lower parts : Greyish isabelline, with decided rufescent shading, particularly on the breast ; this coloring is broken by obsolete bars of deeper

FIG. 226.



Anas specularis. P. U. O. C. 8931. Tarsus and foot. About $\frac{1}{3}$ natural size.

rufescent shade. On the sides and flanks each feather has a subterminal dark brown spot more or less irregular in shape and disposition. Under

tail-coverts dull olive greyish, with a tendency to slight vermiculation by a darker shade.

Bill: The upper mandible dusky black; the lower with dull orange shading. Iris dark hazel-brown.

Feet and legs orange yellow.

The adult female differs but slightly from the male in color. In some specimens the brown of the head is not broken continuously by the white of the neck and throat, but the brown crosses the neck just below the chin, dividing the white into two distinct areas on the neck.

Geographical Range.—Central and southern Argentina and Chili; the Straits of Magellan; the Rio Negro, and adjacent territory to the south. (There are birds in the Museo de La Plata, collected at various points in this latter region.)

ANAS CRISTATA Gmelin.

Crested Duck, Lath. Gen. Syn. III. pt. 2, p. 543 (1785: Staten Island).

Anas cristata, Gm. Syst. Nat. I. p. 540 (1788: ex Lath.); Gray, List B. Brit. Mus. Part III. p. 136 (1844: Hermit Isl., Straits of Magellan, Falkland Isl.); id. Gen. B. III. p. 616 (1845); Des Murs in Gay's Hist. Chil. Zool. I. p. 449 (1847); Gould, P. Z. S. 1859, p. 96 (Falkland Isl.); Scl. P. Z. S. 1860, p. 389 (Falkland Isl.); Abbott, Ibis, 1861, p. 160 (Falkland Isl.); Pelz. Reise Novara, Vög. p. 138 (1865: Chili); Scl. P. Z. S. 1867, p. 335 (Chili); Phil. and Landb. Cat. Av. Chil. p. 41 (1868); Scl. & Salv. Ibis, 1870, p. 499 (Tuesday Bay); Cunningh. Nat. Hist. Str. Magell. pp. 154, 266 (1871); Gray, Handl. B. III. p. 82, no. 10651 (1871); Scl. & Salv. Nomencl. Av. Neotr. p. 129 (1873);? Leyb. Excurs. Pamp. Argent. p. (1873); Scl. & Salv. P. Z. S. 1876, p. 381; Scl. P. Z. S. 1880, p. 519; Sharpe, P. Z. S. 1881, p. 13 (Cockle Cove, Feb.: Port Rosario, March); Tacz. Orn. Pér. III. p. 473 (1886); Scl. P. Z. S. 1886, p. 401 (Tarapacá); Phil. Ornith. IV. p. 160 (1888: Pastos Largos); Burm. An. Mus. Nac. Buenos Aires, III. Part X. p. 248 (1888); Tristr. Cat. Coll. B. p. 49 (1889: Tilly Bay, Straits of Magellan); Oust. Miss. Sci. Cap. Horn, Oiseaux, p. 199 (1891); James, New List Chil. B. p. 9 (1892); Salvad. Cat. B. Brit. Mus. XXVII. p. 216 (1895); Lane, Ibis, 1897, p. 192 (Sacaya: Sitani: Lake Huasco); Gosse in Fitzgerald Highest Andes, p. 350 (1889: Horcones Valley); Sharpe, Hand-list B. I. p. 217 (1899); Martens, Hamb. Magalh.

- Sammelnr. Vög. p. 25 (1900 : Straits of Magellan : Falkland Islands);
 Salvad. Ann. Mus. Genov. (2), XX. p. 631 (1900 : Gregory Bay, April :
 Punta Arenas, May, June : Rio Pescado, May).
Tadorna cristata, Stephens in Shaw's Gen. Zool. XII, p. 77 (1824).
Anas specularioides, King, Zool. Journ. IV. p. 98 (1828 : Straits of Magel-
 lan); Gibson, Proc. Phys. Soc. Edinb. IV. p. 186 (1878).
 Milouin des Malouines, Less. Traité d'Orn. p. 632 (1831); Pucher. Rev.
 et Mag. Zool. 1850, p. 636.
Anas pyrrhogastra, Weyen, Nova Acta XVI. Suppl. p. 119, tab. XXV
 (1833 : Marpú, Chili); Hartl. Naum. 1853, p. 222 (Valdivia).
Dafila pyrogaster, Eyton, Mon. Anat. p. 113 (1838); Fraser, P. Z. S.
 1844, p. 157 (Chili).
Anas lophyra, Forst. Icon. ined. pl. 78; id. Descr. Anim. p. 340 (1844 :
 Straits of Magellan).
Dafila pyrrhogastra, Reichenb. Syn. Av. Natatores, pl. 88 fig. 923 (1845).
Dafila cristata, Bonap. C. R. XLIII. p. 650 (1856).
Poecilonetta cristata, Ridgw. Proc. U. S. Nat. Mus. XII. p. 138 (1889 :
 Elizabeth Isl.).

GENERAL DESCRIPTION.

Size.—Total length, about 23.75 inches.

Wing, 11.8.

Culmen, 1.9.

Tail, 6.0.

Tarsus, 1.8.

Color.—General coloring brown in varying shades; deepest on top of head and back; fulvescent and mottled on lower parts.

Head: A hood of smoky brown covers the top of the head and occiput, the posterior feathers of which are prolonged into a pendant crest, the longest feathers of which attain a length of two inches; this hood reaches down on either side to the eye and a little below; it terminates on the forehead just in front of the eyes; the sides of the face and head are dull isabelline, minutely spotted with brown of the same shade as the hood.

Neck: Dull isabelline; immaculate and lighter on the chin, throat and lower neck; flecked and spotted on the sides and above with smoky brown in tiny markings like those of the sides of the head and face.

Back: Foreback and mantle brown of a smoky shade, each feather hav-

ing a paler edge of dull isabelline ; the lower back, rump and upper tail-coverts olive-brown, lightest on the rump.

Tail : Velvety brownish black, with a gloss of purple.

Wings : Scapulars smoky brown, darker at the tips ; wing proper, olive-brown with a decided smoky tinge ; a speculum on the secondaries, me-

FIG. 227.



Anas cristata, adult male, P. U. O. C. 7822. Profile of head. About $\frac{1}{3}$ natural size.

tallic coppery in color with bronze green reflections ; each feather has this color on the outer web beginning well toward its base ; the metallic region is some two inches in length, is bordered toward the end of the feather with a velvety black margin a third of an inch wide and the terminal inch on both webs is pure white, making a conspicuous band ; the primaries

FIG. 228.



Anas cristata, P. U. O. C. 7822. Bill and head from above. $\frac{1}{3}$ natural size.

FIG. 229.



Anas cristata, female, P. U. O. C. 7821. Foot and tarsus. $\frac{1}{3}$ natural size.

are dark olive-brown ; the under wing-coverts smoky grey with an olive shade ; axillaries white.

Lower parts : The breast, sides and abdomen dull isabelline, with a

strong rufescent shading ; the feathers on the breast with a darker brown rufescent spot in the center of each ; these markings are not well defined on the sides and flanks, where the feathers are heavily splotched and shaded with dull rufescent brown ; these brownish marks take the form of obscure barring on the abdomen ; the lower tail-coverts reach quite to the tips of the tail feathers proper, are pointed in shape at their ends and of deep velvety black color.

Bill : Black.

Iris : Yellowish red (Hatcher).

Feet : Dark lead-color (Hatcher).

The female is similar to the male in color, but is a little smaller and the crest is not so well developed.

Geographical Range.—Southern Peru, Chili, Argentina, the Magellan Straits and Falkland Islands.

The Crested Duck was met with by the naturalists of the Princeton Expeditions at Montes Rancho, near Mount Tigre, Patagonia in August 1896. From here they sent home a pair of these birds in full plumage, which have in part formed a basis of the foregoing descriptions and figures. The point where these birds were collected, southern Patagonia near the Atlantic Coast, and the season of the year, would seem to indicate that this species is not a migratory bird ; for Cunningham found crested ducks common at Peckett Harbor in February and the birds must have been through with breeding at that time.

This seems to be a common bird and very generally distributed throughout the Patagonian region ; beside the points already indicated through the work of Mr. Hatcher and Dr. Cunningham, every naturalist who has visited the region has encountered the birds at some locality ; specimens from the Museo de La Plata, now forming part of the Princeton collection, were taken in the Province of Chubut in February, 1897. It thus appears that the bird is present at the limits of its north and south range at the same season of the year.

The eggs of this duck have been taken in January in the Bolivian Andes, in December in the Falkland Islands, and at Elizabeth Island on the west coast of Patagonia in January.

"Next morning (12th) [February, 1887] we left Sandy Point, and proceeded northward along the Patagonian coast, on the look-out for the

party we had left about a week previously at Elizabeth Island, as we were anxious to ascertain their welfare before leaving for the Falkland Islands. Finding them encamped on one of the small islands in Peckett Harbor to the north of Elizabeth Island, we remained at that port for the rest of the day, which allowed some of us to land for a ramble. I found a fleshy Chenopodiaceous plant, new to me, but little else of interest; and a considerable number of geese and ducks were shot by the officers. The former were the *Chloephaga Magellanica*, which I have already noticed as common in this region, while the latter were of two very distinct species, *i. e.* the steamer-duck and the *Anas cristata*, which, with perhaps the exception of the steamer, is by far the most abundant of the Anatidæ of the Strait, being to be met with almost everywhere in greater or less numbers, generally swimming among the broad belts of kelp at some distance from the shore. The plumage of both male and female is compounded of various shades of gray and brown, the latter colour predominating; and the male is distinguished by the possession of a small crest. We found them rather good eating during some months of the year; but at others they had an unpleasantly fishy flavor." (Cunningham, Nat. Hist. of the Straits of Magellan, pp. 153-154.)

"Female: Port Rosario, March 15, 1879.

"Female: Cockle Cove, February 7, 1879. Iris blood-red; legs dark grey; upper mandible horn-colour, lower one flesh-colour.

"Male: Tom Bay, November 29, 1879. Eyes yellowish red; bill black.

"The egg is creamy buff, and measures — axis 2.4 inches, diam. 1.65." (Sharpe, P. Z. S. 1881, p. 13.)

Genus MARECA Steph.

Type.

Mareca, Steph. Gen. Zool. XII. 2, p. 130 (1824); Salvadori,

Cat. Bds. Brit. Mus. XXVII. p. 227 (1895); Sharpe,

Hand-list Bds. I.^a p. 218 (1899) *M. penelope*.

Penelops, Kaup, Naturl. Syst. p. 31 (1829) *M. penelope*.

Marcia (errore?), Leach, fide Sw. Class. B. II. p. 336 (1837).

Geographical Range. — Palearctic, Nearctic, and Neotropical Regions.

MARECA SIBILATRIX (Poeppig).

Pato pico pequeno, Azara, Apunt. III. p. 432 (1805).

Anas viduata (part), Vieill. N. Dict. d'Hist. Nat. V. p. 164 (1816).

Anas sibilatrix, Poeppig, Fror. Not. XXXI. No. 529, p. 10 (1829: Chili).

Anas chiloensis, King, P. Z. S. 1830-31, p. 15 (Chiloe); Burm. La Plata Reise, II. p. 517 (1861: Mendoza); Schl. Mus. Pays. Bas, VI. Anseres, p. 46 (1866).

Mareca chiloensis, Eyton, Mon. Anat. p. 117, pl. 21 (1838: Chiloe); Fraser, P. Z. S. 1843, p. 119 (Chili); Gray, List B. Brit. Mus. Part III. p. 134 (1844: Falkland Isl.); id. Gen. B. III. p. 614 (1845); Reichenb. Syn. Av. Natatores, pl. 92, figs. 162-163 (1845); Hartl. Ind. Azara, p. 27 (1847); Des Murs in Gay's Hist. Chil. Zool. I. p. 447 (1847); Hartl. Naum. 1853, p. 222 (Valdivia); Bibra, Denkschr. Ak. Wien, V. p. 131 (1853: Chili); Cass. U. S. Astron. Exped. Birds, p. 201 (1856); Gould, P. Z. S. 1859, p. 96 (Falkland Isl.); Scl. P. Z. S. 1860, p. 389 (Falkland Isl.); Abbott, Ibis, 1861, p. 160 (Falkland Isl.); Pelz. Reise Novara, Vög. p. 138 (1865: Chili); Scl. P. Z. S. 1867, p. 335 (Chili); Phil. & Landb. Cat. Av. Chil. p. 41 (1868); Scl. & Salv. P. Z. S. 1869, p. 635 (Argent. Rep.); iid. Ibis, 1869, p. 284 (Gregory Bay); Eyton, Syn. Anat. p. 69 (1869); Gray, Handl. B. III. p. 81, no. 10630 (1871); Cunningh. Nat. Hist. Str. Magell. p. 277 (1871: Gregory Bay); Burm. P. Z. S. 1872, p. 368 (Argent. Rep.); Scl. & Salv. Nomencl. Av. Neotr. p. 130 (1873); Leybold, Excurs. Pamp. Argent. p. 62 (1873); Huds. P. Z. S. 1876, p. 108; Durnf. Ibis, 1876, p. 163 (Buenos Aires); Milne-Edwards, Faun. Rég. Austr. Ann. Sci. Nat. (6), xiii, Art. IX. p. 45 (1882); White, P. Z. S. 1883, p. 42 (La Plata); Withington, Ibis, 1888, p. 471 (Lomas de Zamora); Burm. An. Mus. Nat. Buenos Aires, III. Part X. p. 247 (1888: Northern & Central Patagonia), part XI. p. 320 (1890: Rio Singeur); Lataste, Actes Soc. Scient. Chili, III, p. cxv (1893: Colchagua, Jan.).

Anas parvirostris, Merr. in Ersch. u. Grub. Enc. sect. i. Vol. XXXV. p. 43 (1841).

Sarkidiornis sibilatrix, Gray, Gen. B. III. p. 605 (1845).

Chaulelasmus chiloensis, Licht. Nomencl. Av. Mus. Berol. p. 101 (1854).

Anas (Mareca) chiloensis, Burm. J. f. O. 1860, p. 267 (Mendoza).

Mareca sibilatrix, Scl. & Salv. P. Z. S. 1876, p. 395; Durnf. Ibis, 1877, p. 41 (Chupat Valley, common), p. 192 (Baradero, April), 1878, p. 401 (Mouth of Sengelen river, abundant); Scl. & Salv. P. Z. S. 1878, p. 436 (Elizabeth Isl.); Scl. P. Z. S. 1880, p. 514; id. & Salv. Voy.

Chall. II. Birds, p. 107 (1881: Straits of Magellan); Sharpe, P. Z. S. 1881, p. 13 (Coquimbo); Doering, Expl. al Rio Negro, Zool. Aves, p. 54 (1882: Rio Sauce (Chico): Rios Negro & Colorado); Barrows, Auk, I. p. 274 (1884: Bahia Blanca); Scl. & Huds. Argent. Orn. II. p. 135 (1889); Oust. Miss. Sci. Cap Horn, Oiseaux, p. 210 (1891); Holland, Ibis, 1892, p. 208 (Estancia Espartilla, common resident, breeds in Nov.); James, New List Chil. B. p. 9 (1892); Salvad. Cat. B. Brit. Mus. XXVII. p. 236 (1895); Lane, Ibis, 1897, p. 194 (Rio Pilmaiguen: Rio Bueno, Feb.); Schalow, Zool. Jahrb. Suppl. IV. p. 674 (1898: Concepcion); Sharpe, Hand-list, B. I. p. 218 (1899); Carbajal, La Patagonia, Part II. p. 282 (1900); Martens, Hamb. Magalh. Sammelr. p. 25 (1900: Straits of Magellan: Falkland Islands).

Anas (Mareca) sibilatrix, Reichen. Orn. Centralbl. 1882, p. 20.

GENERAL DESCRIPTION.

Size.—Male, P. U. O. C. 7835, Rio Coy, Patagonia, 24th January, 1898 (breeding bird), A. E. Colburn, collector.

Total length, about 20 inches.

Wing, 10.5.

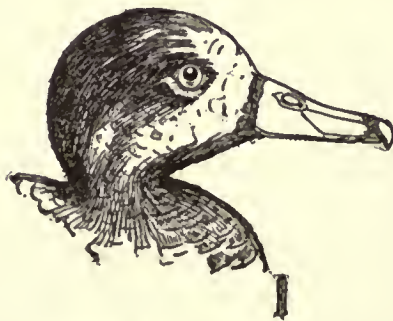
Culmen, 1.5.

Tail, 4.0.

Tarsus, 1.55.

Color.—(Male cited above.) General color: dark above, light beneath, with chestnut sides, black neck, iridescent green-purple hood and white forehead.

FIG. 230.



Mareca sibilatrix, adult male, P. U. O. C. 7833 (breeding). Pattern of color disposal on head and face. About $\frac{1}{2}$ natural size.

FIG. 231.



Mareca sibilatrix. Bill and forehead from in front. $\frac{1}{2}$ natural size.

Head: Forehead and region in front of and below the eye and the lower eyelid, white, many of the feathers, particularly near where they join the black region, narrowly tipped with dusky or black; the rest of the head black, which, back of and above the eye, is decorated with a band of changeable iridescent green, having strong metallic reflections; this might be described as a hood, but that it is divided by a narrow area of dusky feathers on the crown.

Neck: Black, except on the chin, where the white is shaded by dusky tips to each feather; where it joins the body, the black is banded narrowly with white.

Back: Black or dusky, each feather broadly edged with white; lower back and rump black; upper tail-coverts white, forming a conspicuous patch, strongly contrasted against the lower back and tail.

Tail: Dusky blackish brown; beneath, the rectrices are silvered with a strong grey color.

Wings: Scapulars black, with sharply defined white borders or edges; tertials long and narrowly pointed and bordered with defined white margins, the outer web velvety black, the inner smoky black or brown; primaries blackish brown; wing-coverts pure white, except those just at the bend of the wing, which are dull grey; the tips of the greater wing-coverts velvety black for their terminal half inch; these, with the velvety black secondaries, form a speculum of that color; under wing-coverts silver-grey, powdered with tiny fleckings of dusky brown.

Lower parts: Upper breast and chest barred with white on a dusky ground; lower breast and abdomen white; sides and flanks, as well as the under tail-coverts and vent, strongly shaded with rusty red, immaculate on the extreme flanks, but more or less broken with white shading on each feather elsewhere.

Bill: Bluish black (Colburn).

Feet: Bluish black (Colburn).

Iris: Hazel-brown (Colburn).

The adult female is of about the same size as the male, but is not so highly colored, the rusty of the sides and flanks varying much in intensity and amount; this also applies to breeding male birds, many of which have the rusty color restricted, ill defined and dull. Fourteen birds taken on the breeding grounds in January, when they were just bringing out broods, form the basis for the above generalization.

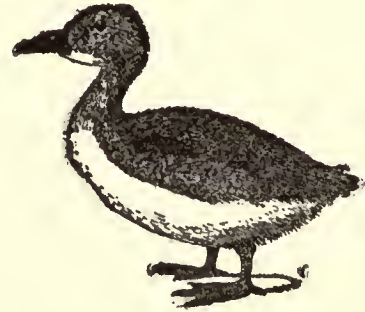
Ducklings in the down are brownish above, yellowish white below and barred slightly on the sides. The crown is deep seal-brown and the sides of the head and face, as well as the back of the neck, are decidedly cinnamon, but of a pale shade ; two whitish areas show on either side of the

FIG. 232.



Foot and tarsus of *Mareca sibilatrix*. About $\frac{1}{2}$ natural size.

FIG. 233.



Mareca sibilatrix. P. U. O. C. 7842. Young bird in down. Slightly reduced.

rump and two more, one back of each downy wing, relieve the brown of the back.

Geographical Range.—Southern South America ; Patagonia ; the Falkland Islands.

The fine series of this bird procured by the naturalists of the Princeton Expeditions, embracing a large number of breeding birds of both sexes, as well as three downy young ducklings, some material from the Museo de La Plata and the series of twenty birds in the British Museum, form the basis for the foregoing descriptions.

The birds have a wide range even during the breeding season ; and this period seems a long one. In northern Argentina and Paraguay, which latter is about the northern limit of the range of this duck, eggs have been collected in late November, while Mr. Hatcher and Mr. Colburn found the same duck breeding in southern Patagonia in late December and all through January. They breed in the Falkland Islands and Captain King obtained the birds, which he described as new, on the Island of Chiloe.

The eggs vary from cream color to pale brown and Mr. Hudson has written of pure white eggs collected by him.

It is of interest to note that the birds which have been semi-domesticated and have been bred for many years in the Zoological Gardens in

London, have so far changed their breeding habits as to lay in May, June and July instead of November, December and January, the natural breeding season in the southern hemisphere, when the birds are enjoying the beginning of the spring in the region.

"First imported from Chili in 1870 (see P. Z. S. 1870, p. 667), and commenced breeding the following year. We have now supplied most of the Continental gardens with examples of this highly ornamental species."

Dates of Hatching of Chiloe Widgeon. (In the Zoological Gardens, London.)

1871. June 7th.	1875. June 2nd.
1872. May 22nd.	" July 10th.
1873. " 29th.	1876. June 7th.
1874. " 28th.	1878. " 22nd.
" July 3rd.	1879. " 15th.

(P. L. Sclater, P. Z. S. 1880, pp. 514-515.)

719, male, Elizabeth Island.

"Eyes grey, bill black, feet black; stomach had sand, etc." (Sclater & Salvin, on Birds Antarctic America, Voy. H. M. S. 'Chall.'—No. ix. p. 436, 1878.)

"Male. La Plata, Buenos Aires, Arg. Rep. Nov. 24, 1882.

"Female. La Plata, Buenos Aires, Arg. Rep., Nov. 4, 1882.

"Iris dark brown.

"Common in flocks about lagoons." (E. W. White, P. Z. S. 1883, p. 42.)

"The displays of most ducks known to me take the form of mock fights on the water; one exception is the handsome and loquacious whistling widgeon of La Plata, which has a pretty aerial performance. A dozen or twenty birds rise up until they appear like small specks in the sky, and sometimes disappear altogether; and at that great altitude they continue hovering in one spot, often for an hour or longer, alternately closing and separating; the fine, bright, whistling notes and flourishes of the male curiously harmonizing with the grave, measured notes of the female; and every time they close they slap each other on the wings so smartly that the sound can be distinctly heard, like applauding hand-claps, even after

the birds have ceased to be visible." (Hudson, Natur. La Plata, 1892, p. 266.)

Genus NETTIUM Kaup.

Type.

Nettion, Kaup (= Nettium), Naturl. Syst. p. 95 (1829);

Salvadori, Cat. Bds. Brit. Mus. XXVII. p. 238

(1835); Sharpe, Hand-list Bds. I. p. 218 (1899) . *N. crecca*.

Querquedula, Eyton (nec Steph.), Mon. Anat. p. 37 (1838). *N. crecca*.

Virago, Newt. P. Z. S. 1871, p. 651 *N. castaneum*.

Geographical Range.—Cosmopolitan.

NETTIUM FLAVIROSTRE (Vieillot).

Pato pico amarillo y negro, Azara, Apunt. III. p. 448 (1805: Buenos Aires).

Anas flavirostris, Vieill. N. Dict. d'Hist. Nat. V. p. 107 (1816); Gray, Gen. B. III. p. 616 (1845); Hartl. Ind. Azara, p. 28 (1847); Reichenb. Syn. Av. Natatores, pl. 90 fig. 2343 (1850); Burm. La Plata Reise, II. p. 516 (1861); Schl. Mus. Pays. Bas. VI. Anseres, p. 59 part (1866); Frenzel, J. f. O. 1891, p. 125 (Laguna de Pocho in der Sierra).

Anas creccoides, King, Zool. Journ. IV. p. 99 (1828: Straits of Magellan). Sarcelle à bec jaune et noir, Less. Traité d'Orn. p. 634 (1831: Malouines).

Querquedula creccoides, Eyton, Mon. Anat. p. 128 (1838); Darwin, Voy. Beagle, Birds, p. 135 (1841: Rio Plata: Straits of Magellan); Fraser, P. Z. S. 1843, p. 118 (Chili); Gray, List B. Brit. Mus. Part III. p. 138 (1844); id. Gen. B. III. p. 616 (1845); Cass. U. S. Astron. Exped. Birds, p. 203, pl. XXVI (1856: Chili); Gould, P. Z. S. 1859, p. 96 (Falkland Isl., egg); Scl. P. Z. S. 1860, p. 389 (Falkland Isl.); Abbott, Ibis, 1861, p. 160 (Falkland Isl.); Scl. P. Z. S. 1867, p. 335; Phil. & Landb. Cat. Av. Chil. p. 42 (1868); Scl. P. Z. S. 1871, p. 700; Milne-Edwards, Faune Rég. Austr. Ann. Sci. Nat. (6), XIII. Art. IX. p. 46 (1882).

Anas azaræ, Merrem in Ersch. u. Grub. Enc. sect. I. Vol. XXXV, p. 26 (1845).

Querquedula oxyptera, Hartl. (nec. Meyen), Naum. 1853, p. 222 (Valdivia); Licht. Nomencl. Av. Mus. Berol. p. 102 (1854: Montevideo); Pelz. Reise Novara, Vög. p. 138 (1865: Chili); Sharpe, P. Z. S. 1881, p.

14 (Port Gallant and Cockle Cove) ; Oust. Miss. Sci. Cap. Horn, Oiseaux, p. 314. (1891).

Anas (Dafila) flavirostris, Burm. J. f. O. 1860, p. 266 (Mendoza).

Querquedula flavirostris, Scl. P. Z. S. 1867, p. 335 (part) ; id. & Salv. t. c. pp. 990, 991, 1868, p. 146 (Buenos Aires) ; Burm. P. Z. S. 1872, p. 367 (Argent. Rep.) ; Scl. & Salv. Nomencl. Av. Neotr. p. 129 (1873) ; Huds. P. Z. S. 1874, p. 167 ; Scl. & Salv. P. Z. S. 1876, p. 386 ; Durnf. Ibis, 1877, p. 41 (Chupat Valley, breeds), p. 191 (Buenos Aires) ; 1878, p. 401 (Mouth of Sengelen, resident) ; Scl. P. Z. S. 1879, p. 310 (eggs) ; 1880, p. 552 : id. Voy. Chall. II. Birds, p. 150 (1881) ; Doering, Expl. al Rio Negro, Zool. Aves, p. 54 (1882 : abundant on the Rios Negro & Colorado) ; White, P. Z. S. 1883, p. 42 (Cordova) ; Beil. J. f. O. 1887, p. 133 ; Cab. J. f. O. 1888, p. 118 ; Burm. An. Mus. Nac. Buenos Aires, III. Part X. p. 247 (1888 : Patagonia : Falkland Isl.) ; Scl. & Huds. Argent. Orn. II. p. 131 (1889) ; Holland, Ibis, 1890, p. 425 (Buenos Aires) ; Oust. Miss. Sci. Cap. Horn, Oiseaux, p. 205 (1891) ; Holland, Ibis, 1892, p. 207 (Estancia Espartilla, common resident, breeds in Oct.) ; James, New List Chil. B. p. 9 (1892) ; Aplin, Ibis, 1894, p. 200 (Uruguay) ; Carabajal, La Patagonia, Part II. p. 282 (1900).

Nettion flavirostris, Gray, Handl. B. III. p. 83 no. 10665 (1871) ; Ridgw. Proc. U. S. Nat. Mus. XII. p. 138 (1889 : Port Famine, Sandy Point).

Anas (Querquedula) flavirostris, Reichen. Orn. Centralbl. 1882, p. 21.

Nettion flavirostre, Salvad. Cat. B. Brit. Mus. XXVII. p. 261 (1895) ; Schalow, Zool. Jahrb. Suppl. IV. p. 675 (1898 : Rio de los Patos, Punta Arenas) ; Salvad. Ann. Mus. Genov. (2), XX. p. 632 (1900 : Punta Arenas, May : Penguin Rookery, Feb.) ; Martens, Hamb. Magalh. Sammelr. Vög. p. 25 (1900 : Patagonia : Falkland Islands).

Nettium flavirostre, Sharpe, Hand-list B. I. p. 219 (1899).

GENERAL DESCRIPTION.

Size. — 7812 P. U. O. C. Adult male. Montes Ranch, near Mount Tigre, Patagonia. 23rd August, 1896. J. B. Hatcher.

Total length, about 16 inches.

Wing, 8.2.

Culmen, 1.3.

Tail, 4.7.

Tarsus, 1.1.

Color.—Head: Dull vinaceous brown, each feather with a terminal margin and one or two narrow black bands; this gives the whole head the appearance of being finely mottled or flecked with dusky; the feathers of the crown and occiput are long and form a decided crest; the longest feathers are darker than the rest and soft, almost filamentous.

Neck: The upper neck is like the head in color; this ceases abruptly and definitely on the lower neck and the color of that part is brighter vinaceous, each feather having a black spot near the tip.

Back: The mantle greyish brown, with a black spot near the tip of each feather, which is defined by a strong margin of rufescent brown. Lower back, rump and upper tail-coverts uniform greyish brown, with a strong olive tint.

Tail: Greyish brown, with olive cast.

Wings: The anterior scapulars like the mantle in color and marking; the longer scapulars and tertials dull brownish, edged with bright rufescent brown or cinnamon; upper wing-coverts olive-brown, with a greyish cast; the tips of the greater row of coverts are bright cinnamon and form a defined border, a third of an inch wide, to the velvety black speculum, the outer webs of a few of the inner feathers of which are glossed with metallic greenish reflections; the feathers of the speculum are tipped with rufescent white, which forms a posterior border nearly half an inch wide; primaries dull olive-brown; the under wing-coverts greyish brown, except the central ones, which are white, as are the axillaries.

Lower parts: The breast and abdomen whitish; the breast more or less tinged with rufescent or reddish brown; each feather is barred with at least two blackish bands; that near the tip being like a spot of irregular shape and the other bars hidden and hardly noticeable; this becomes obsolete barring on the belly; the vent and under tail-coverts are dull olive-grey and some of the feathers of the coverts are strongly shaded with cinnamon; sides and flanks dull olive-grey.

Bill: Yellow, with the culmen shaded into black; the nail definite black.

Feet: Blue lead-color.

Iris: Hazel or carmine.

The adult female is like the male, but is somewhat smaller and duller in color.

Young birds of the year are like the female, but all the colors are duller

and the markings on the head and breast are not well defined in most individuals.

Geographical Range.—Southern Brazil, and southern Bolivia on the north. Argentina, Chili, Patagonia, Straits of Magellan and the Falkland Islands.

This little duck appears to be common and resident throughout Argentina; Mr. Hatcher secured it near Mount Tigre in August and not far away on Rio Coy in January. At both places it seems to have been abundant, though it was in flocks at each season and was evidently not breeding from the plumage of the birds sent home with the collection. From all that we know, the breeding season begins late in August and continues through September and into October, in Argentina. The nests of the birds are generally in holes in the clay banks of some stream and are described by Mr. White in an appended extract from the Proceedings of the Zoological Society. Mr. Barrows found it in his expeditions in northern Argentina as "the commoner teal of the pampas" in December.

Dr. Sclater says that this duck is in the Zoological Gardens, "Obtained from Chili in 1871, and again in 1874, but has not bred with us." (P. L. Sclater, P. Z. S. 1880, p. 522.)

"Male. Cosquin, Cordova, Arg. Rep., June 29, 1882.

"Female. Cosquin, Cordova, Arg. Rep., June 23, 1882.

"Iris brown.

"This Duck flies in flocks of about twenty in winter, nesting during August and September in holes on the clay banks of the river. The nest is formed of a large quantity of down, in which I found six eggs of a dull white colour. Dimensions: axis 54 millim., diam. 40 millim." (E. W. White, P. Z. S. 1883, p. 42.)

"Male: Port Gallant, west coast of Patagonia, February 1880. Iris dark brown; bill yellow on sides, black culmen; legs and feet light grey.

"Female: Cockle Cove, October 1879. Bill yellow, with black culmen; eyes yellow; legs and feet grey." (Sharpe, P. Z. S. 1881, p. 14.)

Genus DAFILA Steph.

Type.

Dafila, Leach, in Brit. Mus.; Steph. Gen. Zool. XII. 2, p. 126
(1884); Salvadori, Cat. Bds. Brit. Mus. XXVII. p. 270
(1895); Sharpe, Hand-list Bds. i. p. 219 (1889)

. . . *D. acuta*.

Trachelonetta, Kaup, Naturl. Syst. p. 115 (1829) *D. acuta*.
Phasianurus, Wagl. Isis, 1832, p. 1225 *D. acuta*.
Daphila (!), Sw., fide Coues, Birds N.-West, p. 562 (1874); Gieb. Thes.
 Orn. II. p. 14 (1875).

Geographical Range.—Found throughout the world, except in Australia and New Zealand; and a possible species (*Dafila modesta* Tristram) has been discovered in Polynesia on Sidney Island, Phoenix Group, Central Pacific Ocean.

DAFILA SPINICAUDA (Vieillot).

Pata cola aguda, Azara, Apunt. III. p. 421 (1805: Buenos Aires).

Anas spinicauda, Vieill. N. Dict. d'Hist. Nat. V. p. 135 (1816); Burm.
 La Plata Reise, II. p. 515 (1861: Paraná); Schl. Mus. Pays Bas, VI.
 Anseres, p. 38 (1866).

Anas oxyura, Licht. in Mus. Berol.; Meyen. Nova Acta XVI, Suppl. I.
 p. 122 (1834: Chili); Gray, Gen. B. III. p. 616 (1845); Des Murs in
 Gay's Hist. Chil. Zool. I. p. 449 (1847); Licht. Nomencl. Av. Mus.
 Berol. p. 101 (1854); Cass. U. S. Astron. Exped. Birds, p. 202 (1856);
 Burm. La Plata Reise, II. p. 515 (1861: Mendoza); Phil. & Landb.
 Cat. Av. Chil. p. 41 (1868); Phil. Ornith., IV. p. 160 (1888: Antofagasta);
 Waugh & Lataste, Actes Soc. Scient. Chil. IV. p. lxxxix
 (1894: Peñaflores).

Erismatura spinicauda Gray, Gen. B. III. p. 627 (1844); Hartl. Ind.
 Azara, p. 27 (1847); Gray, Gen. B. III. App. p. 28 (1849).

Dafila oxyura, Reichenb. Syn. Av. Natatores, pl. 88 figs. 920-928 (1845);
 Scl. P. Z. S. 1867, p. 335 (Chili); Gray, Handl. B. III. p. 81, no.
 10635 (1871).

Dafila spinicauda, Bonap. C. R. XLIII. p. 650 (1856); Scl. & Salv. P. Z.
 S. 1868, p. 146 (Arg. Rep.), 1869, p. 157 (Tinta, Peru); iid. Ibis,
 1870, p. 501; Scl. P. Z. S. 1870, pp. 665, 666, pl. XXXVIII; Gray,
 Handl. B. III. p. 81 no. 10634 (1871); Burm. P. Z. S. 1872, p. 367
 (Arg. Rep.); Garrod, P. Z. S. 1873, pp. 467, 639; Scl. & Salv.
 Nomencl. Av. Neotr. p. 130 (1873); iid. P. Z. S. 1876, pp. 17, 392;
 Durnf. Ibis, 1876, p. 163 (Buenos Aires, Oct.), 1877, pp. 41, 192
 (Baradero, April, common), 1878, pp. 65, 401 (Valleys of the Sengel
 & Sengelen, common resident); Scl. P. Z. S. 1880, p. 515; Sharpe,
 P. Z. S. 1881, p. 14 (Talcahuano, Sept.); Salv. Cat. B. Strickl.

Coll. p. 533 (1882); Milne-Edwards, Faun. Rég. Austr. An. Sci. Nat. (6), XIII, Art. IX. p. 45 (1882); Doering, Expl. al Rio Negro, Zool. Aves, p. 54 (1882); White, P. Z. S. 1883, p. 42; Barrows, Auk, I. p. 274 (1884: Entrerios); Scl. P. Z. S. 1886, p. 402 (Tarapacá); Berl. J. f. O. 1887, p. 133; Scl. & Huds. Argent. Orn. II. p. 134 (1889); Holland, Ibis, 1890, p. 425 (Buenos Aires); Scl. P. Z. S. 1891, p. 136 (Tarapacá); Finn. P. Z. S. 1891, p. 178; Oust. Miss. Sci. Cap Horn, Oiseaux, p. 209 (1891); Graham Kerr, Ibis, 1892, p. 146 (Fortin Donovan); Holland, t. c. p. 207 (Estancia Espartilla, common resident, breeds in Oct.); James, New List Chil. B. p. 9 (1892); Huds. Idle Days in Patagonia, p. 80 (1893); Alpin, Ibis, 1894, p. 201 (Uruguay); Salvad. Cat. B. Brit. Mus. XXVII, p. 279 (1895); Lane, Ibis, 1897, p. 194 (Tarapacá up to 12,000 feet: Sacaya, breeds Oct.-Feb.); Schalow, Zool. Jahrb. Suppl. IV. p. 674 (1891: Ovalle, Oct.); Sharpe, Hand-list, B. I. p. (1899); Salvad. Ann. Mus. Genov. (2), XX. p. 632 (1900: Punta Arenas, May); Martens, Hamb. Magalh. Sammelr. Vög. p. 25 (1900: Straits of Magellan: Falkland Islands).

Daphila urophasianus, Scl. (nec Vig.) P. Z. S. 1860, p. 389 (Falkland Isl.); Abbott, Ibis, 1861, p. 160 (Falkland Isl.).

Anas (Dafila) spinicauda, Burm. J. f. O. 1860, p. 266 (Mendoza); Milne-Edwards, Faun. Rég. Austr. Ann. Sci. Nat. (6), XIII. Art. IX. p. 45 (1882).

Anas (Dafila) caudacuta, Burm. (nec Pall.) J. f. O. 1860, p. 247 (Paraná).

Dafila, sp. Scl. & Salv. Ibis, 1868, p. 189 (Sandy Point).

Dafila caudacuta, Gray, Handl. B. III. p. 41, no. 10633 (1871: Paraná)

Anas (Dafila) spinicauda, Reichen. Orn. Centralbl. 1882, p. 20.

Daphila oxyura, Burm. An. Mus. Nac. Buenos Aires, III. Part X. p. 247 (1888: Patagonia).

Anas oxyurus, Lataste, Actes Soc. Scient. Chil. III. p. CXV (1893: Colchagua, Jan.).

GENERAL DESCRIPTION.

Size.—Adult male, 7832, P. U. O. C. Montes Ranch, near Mount Tigre, Patagonia, 24th August, 1896.

Total length, about 20 inches.

Wing, 9.1.

Culmen, 1.9.

Tail, longest feathers, 5.9.

Tarsus, 1.6.

Color.—(Male cited above.)

Head: With a rich rufous chestnut hood, extending from the bill back above the eyes to the occiput; each chestnut feather of this cap has a central line or marking of dusky brown; the rest of the head and sides of the face pale grey brown, each feather decorated like those of the cap with dark central markings, the whole having a finely striped or flecked appearance.

Neck: The throat whitish, with faint fine striping; upper neck pale grey brown, like the sides of the face and striped in the same way with dusky; the lower neck, both above and below, strongly rufescent, the feathers having broad dusky centers, giving a spotted appearance.

Back: Mantle, rump and upper tail-coverts dusky brown, each feather margined with greyish brown, sometimes slightly rufescent.

Tail: Greyish olive tinged with brown, each feather edged with rufous. The feathers are long and acuminate, the two central ones are longest and make a pointed tail.

Wings: Scapulars dark dusky brown, strongly margined with reddish-brown; wing proper, grey brown; the greater coverts the same shade but tipped with buffish white for half an inch, thus forming the anterior boundary of the velvety black speculum, which is sometimes glossed with greenish; this speculum is formed by the secondaries having a tipping of whitish buff three quarters of an inch wide; inner tertials lengthened and lanceolate and greyish brown in tone, with a broad velvety black central stripe; primaries greyish brown, darkest at the tips; under wing-coverts greyish brown; axillaries greyish brown, with whitish brown tips.

Lower parts: Feathers dull dusky brown in the center; on the upper breast these are margined with rufescent brown and this becomes whitish on the lower breast and abdomen, and again greyish toward the vent; the feathers of the sides and flanks have decidedly rufescent edging and this becomes cinnamon on the lower tail-coverts.

Bill: Greenish black; yellowish at the base and darkest on the culmen and at the tip (Hatcher).

Feet: Greenish lead-color (Hatcher).

Iris: Hazel-brown (Hatcher).

The adult female is similar in color to the male, but duller; the chestnut cap is not so defined or intense in color, nor are the middle tail-feathers so strongly developed.

Young birds of the year are like the females, but the young males are more strongly chestnut on the head and more rufescent generally.

Geographical Range.—The whole of southern South America from southern Brazil and southern Peru; Patagonia, the Straits of Magellan and the Falkland Islands.

In southern Patagonia Mr. Hatcher procured a fine series of this duck, all the birds being adults. They were taken at all the seasons when the collectors from Princeton were exploring this part of the country and from unworn individuals taken in August, the series begins again with birds captured in December, January and February, the last two months the early breeding season here, while very worn adults taken late in March (25th) show the birds after breeding, but before the moult.

The birds have been captured with eggs in the Province of Tarapacá, Chili, in March and appear to be, at least so far as their mainland distribution goes, resident species present throughout the year in suitable locations.

The eggs are described as being "oval, and almost without gloss, and cream brown in color." The breeding season is, without doubt, a long one because of the wide distribution of the birds, extending from late December to early March, the records of breeding in the Zoological Gardens in London would seem to bear out this conclusion and are given below.

There is a very considerable individual color variation among these birds, which does not seem to correlate with either sex, season or age. It is largely due to the amount of the rufescent brown and its intensity; some birds are nearly lacking in this shade, while others have it strongly developed. Hence some birds present an almost white under surface, save on the breast, but in others the rufescent prevails so that no white shows on the lower parts.

"The Chilian Pintail was introduced by Lord Derby, and a single example sold at the Knowsley sale in 1851 was purchased by the Society. It was not obtained again, I believe, until 1870, when eight examples were procured from Mr. Weissaupt. These began to breed in 1872. It has thriven well ever since, and we have supplied many of our continental friends with examples of it."

Dates of Hatching of Chilian Pintail. (In the Zoological Gardens, London.)

1872. June 11th.	1876. March 10th.
“ “ 22d.	“ July 24th.
1873. April 28th.	1877. May 1st.
“ May 9th.	“ June 15th.
“ “ 31st.	“ “ 21st.
“ June 16th.	“ “ 26th.
1874. April 22d.	1878. May 10th.
“ May 9th.	“ “ 23d.
“ “ 14th.	1879. June 23d.
1875. April 26th.	“ August 7th.
“ May 11th.	

(P. L. Sclater, P. Z. S. 1880, pp. 215–216.)

“Male. La Plata, Buenos Aires, Arg. Rep., Nov. 9, 1882.

“Iris dark brown.

“A common Duck, which frequents the lagoons about here in flocks.”

(E. W. White, P. Z. S. 1882, p. 42.)

“Male: Talcahuano, September 1879. Bill yellow, with black culmen; eyes brown; legs and feet grey and black.” (Sharpe, P. Z. S. 1881, p. 14.)

Genus PÆCILONETTA Eyton.

Type.

Pæcilonitta, Eyton (= *Pæcilonetta*), Mon. Anat. p. 31

(1838); Salvadori, Cat. Bds. Brit. Mus. xxvii. p. 281

(1895); Sharpe, Hand-list Bds. i. p. 220 (1899) . *P. bahamensis*.

Pæcilonitta, G. R. Gr. List Gen. B. p. 74 (1840).

Pæcilonetta, Agassiz, Nomencl. Zool. Aves, p. 61 (1842–46).

Geographical Range.—The West Indies and Bahamas; South America; Africa, south of the Desert of Sahara.

PÆCILONETTA BAHAMENSIS (Linnæus).

Ilathera Duck, Catesby, Nat. Hist. Carol. I. p. 93 pl. 93 (1754).

Anas bahamensis, Linn. Syst. Nat. I. p. 11 (1758); Fraser, P. Z. S. 1843, p. 119 (Chili); Yarrell, P. Z. S. 1847, p. 54 (Chili, egg).

Anas ilathera, Bonn. Enc. Méth. i. p. 151 (1791).

Pato pico aplomado y roxo, Azara, Apunt. III. p. 436 (1805: Buenos Aires).

Anas rubrirostris, Vieill. N. Dict. d'Hist. Nat. V. p. 108 (1816: ex Azara).

Mareca bahamensis, Stephens in Shaw's Gen. Zool. XII. p. 137 (1824).

Anas urophasianus, Vigors. Zool. Journ. IV. p. 357 (1829); Milne-Edwards, Faun. Rég. Austr. Ann. Sci. Nat. (6), XIII. Art. IX. p. 46 (1882).

Phasianurus vigorsii, Wagl. Isis, 1832, p. 1235.

Dafila urophasianus, Eyton, Mon. Anat. p. 112, pl. 20 (1838); Bridges, P. Z. S. 1841, p. 95 (Chilian Andes); Fraser, P. Z. S. 1844, p. 157 (Chili); Instr. Cat. Coll. B. p. 50 (1889: Chili).

Pæcilonitta bahamensis, Eyton, Mon. Anat. p. 116 (1838).

Anas fimbriata, Merrem, Ersch u. Grub. Enc. sect. i, vol. xxxv, p. 35 (1841: ex Azara).

Dafila bahamensis, Gray, List B. Brit. Mus. Part III. p. 135 (1844); id. Gen. B. III. p. 615 (1845); Hartl. Ind. Azara, p. 27 (1847); Des Murs in Gray's Hist. Chil. Zool. I. p. 448 (1847); Hartl. Naum. 1853, p. 222 (Valdivia); Licht. Nomencl. Av. Mus. Berol. p. 102 (1854); Cass. U. S. Astron. Exped. II. Birds, p. 203 (1856: Chile); id. U. S. Expl. Exped. Birds, p. 341 (1858); Pelz. Reise Novara, Vög. p. 138 (1865: Chile); Scl. P. Z. S. 1867, p. 335 (Chile); Phil. & Landb. Cat. Av. Chil. p. 41 (1868); Scl. & Salv. P. Z. S. 1868, p. 146 (Conchitas); Burm. P. Z. S. 1872, p. 367 (Argent. Rep.); Leybold, Excurs. Pamp. Argent. p. 20 (1873); Scl. & Salv. Nomencl. Av. Neotr. p. 130 (1873); iid. P. Z. S. 1876, p. 392 (part); Durnf. Ibis, 1876, p. 163 (Buenos Aires), 1877, p. 192 (Buenos Aires, not common); Scl. P. Z. S. 1880, p. 516; Doering, Expl. al Rio Negro, Zool. Aves, p. 54 (1882: Carhué); Barrows, Auk, I. p. 274 (1884: Pampas); Berl. J. f. O. 1887, p. 133; Scl. & Huds. Argent. Orn. II. p. 135 (1889); Holland, Ibis, 1890, p. 425 (Buenos Aires); Oust. Miss. Sci. Cap Horn, Oiseaux, p. 314 (1891: Frenzel, J. f. O. 1891, p. 125 (Cordoba); Holland, Ibis, 1892, p. 207 (Estancia Espartilla, common resident, not observed breeding); James, New List Chil. B. p. 9 (1892).

Pæcilonetta bahamensis, Reichenb. Syn. Av. Natatores, pl. 83, fig. 922 (1845); Scl. P. Z. S. 1860, p. 389 (Falkland Isl.); Abbott, Ibis, 1861, p. 160 (Falkland Isl.); Scl. P. Z. S. 1869, p. 629; Gray, Handl. B.

III. p. 81, no. 10,636 (1871); Salvad. Cat. B. Brit. Mus. XXVII, p. 282 (1895); Sharpe, Handlist B. I. p. 220 (1899); Martens, Hamb. Magalh. Sammelr. Vög. p. 25 (1900: Falkland Islands).

Anas (Dafila) bahamensis, Burm. J. f. O. 1860, p. 266: id. La Plata Reise, II, p. 515 (1861: Uruguay).

Daphila urophasianus. Burm. An. Mus. Nac. Buenos Aires III. Part X. p. 247 (1888: Bahia Blanca).

GENERAL DESCRIPTION.

Size.—Adult male, 8677, P. U. O. C. La Plata, May, 1897. Total length, 19.75 inches.

Wing, 9.2.

Culmen, 1.9.

Tail (longest feathers), 5.1.

Tarsus, 1.45.

The female averages a little smaller than the male; there is too a noticeable individual variation in size which does not correlate with sex.

Color.—(Male cited.)

General color: Chestnut and cinnamon varying in shade, but spotted with dusky brown or black markings on each feather; the tail cinnamon.

FIG. 234.



Pycilouetta bahamensis. Male. P. U. O. C. 8669. Profile of head and neck. Reduced.

FIG. 235.



The same: bill and head from above. Reduced.

Head: Upper half of head, forehead, crown and occiput, to just below the eyes, chestnut, each feather marked with a round blackish spot; the rest of the head pure white.

Neck: Above, the neck is concolor with the dark part of the head; below, it is white.

Back : Upper back reddish, of a decided cinnamon shade, each feather with a large blackish brown center spot ; lower back and rump dull blackish brown, the feathers faintly bordered with narrow edges of cinnamon ; upper tail-coverts cinnamon, shading into dove-color or fawn ; some of the upper coverts with dusky centers.

Tail : With central feathers elongated and acuminate and of a pale cinnamon shade, becoming dove-color at the tips of the longer rectrices.

Wings : Dark indefinite slate, with a greenish tinge ; scapulars black, with strong metallic green reflections, each feather bordered conspicuously on both webs with cinnamon-brown ; primaries dull slaty black, with greenish tinges pervading most strongly at the tips on both the inner and outer webs ; greater wing-coverts slaty, with a margin of cinnamon a third of an inch wide at the tips of the feathers, forming a cinnamon band on the anterior boundary of the speculum ; the secondaries slaty, with an area of metallic green on each, then a narrow band of velvety black and finally a broad tip of cinnamon (three quarters of an inch), the whole forming the speculum and its posterior boundary ; the under wing-coverts are slaty, the series gray and the inner ones and axillaries whitish.

Lower parts : Entire lower parts, including sides and flanks, cinnamon of a pale but decided tone, each feather with a central dusky or black spot, which on the flanks becomes arrow shaped ; the under tail-coverts dull cinnamon, with some obsolete central streaks of dusky.

Bill : Bluish lead-color ; there are two well defined areas of bright orange yellow at the base of the upper mandible, one on either side. " Basal half of bill, on sides, pale-colored (rose-red in life) " (Ridgway).

Feet : Umber-brown, shaded and tinged with yellow.

Iris : Hazel-brown.

The females, while averaging somewhat smaller than the males, are scarcely to be distinguished from them by color.

Young in the down are said to be like those of *Dafila acuta*. Young birds of the year can hardly be distinguished from the adults.

Geographical Range.—The Bahama Islands ; the Greater Antilles ; all South America, except Venezuela, Colombia and Ecuador ; Patagonia, the Magellan Straits and Falkland Islands.

Though of regular occurrence in the Patagonian region, this can hardly be regarded as a common bird ; Hudson speaks of it as rare in the

Argentine Republic and even more so in Brazil, while it does not appear in Durnford's List. Mr. Hatcher and his assistants did not procure representatives of the species. The five birds in the University collections are all from the Province of Buenos Aires in Argentina; four were taken at La Plata in May and the fifth at Chascomus in November, the bird is therefore apparently resident in this region.

There are eggs of this duck in the collections of the British Museum, taken in Argentina, in November and also others undated taken in Chili. The birds have bred in the Zoological Gardens in London, where they have been represented for many seasons.

Genus QUERQUEDULA Steph.

Type.

- Querquedula*, Steph. Gen. Zool. xii. 2, p. 142 (1824);
 Salvadori, Cat. Bds. Brit. Mus. xxvii. p. 290 (1895);
 Sharpe, Hand-list Bds. i. p. 220 (1899) *Q. circia*.
Cyanopterus, Eyton, Mon. Anat. p. 38 (1838) (nec Halid.
 1835) *Q. cyanoptera*.
Pterocyanea, Bp. Icon. Faun. Ital., Ucc. Introd. p. 17 (1841). *Q. circia*.
Punanetta, Bp. Compt. Rend. xliii. p. 649, Gen. 28 (1856). *Q. puna*.
Adelonetta, Heine, Nom. Mus. Hein. Orn. p. 346 (1890) (= *Punanetta*;
 Bp.).

Geographical Range.—The Northern Hemisphere and the Neotropical Region.

QUERQUEDULA VERSICOLOR (Vieillot).

- Pato pico tres colores, Azara, Apunt. III. p. 540 (1805 : Paraguay).
Anas versicolor, Vieill. N. Dict. d'Hist. Nat. V. p. 109 (1816) ex Azara;
 Schl. Mus. Pays Bas VI. Anseres, p. 57 (1866); Scl. & Salv. Ibis,
 1870, p. 499 (Sandy Point).
Anas maculirostris, Licht. Verz. Doubl. p. 84 (1823 : Montevideo).
Anas fretensis, King, P. Z. S. 1830, p. 15 (Straits of Magellan).
Cyanopterus fretensis, Eyton, Mon. Anat. p. 131 (1838); Jard. & Selb.
 Illustr. Orn. IV. pl. 29 (1838); Fraser, P. Z. S. 1844, p. 157.
Anas muralis, Merrem, Ersch. u. Grub. Encl. sect. i. vol. xxxv, p. 42
 (1841).
Cyanopterus maculirostris, Hartl. Verz. ges. Mus. p. 119 (1844).

Querquedula maculirostris, Gray, List B. Brit. Mus. Part III. p. 138 (1844); Des Murs in Gay's Hist. Chil. Zool. I. p. 452 (1847); Hartl. Naum. 1853, p. 222 (Valdivia); Licht. Nomencl. Mus. Berol. p. 102 (1854); Phil. & Landb. Cat. Av. Chil. p. 42 (1868); Burm. P. Z. S. 1872, p. 367 (Argent. Rep.); Burm. An. Mus. Nac. Buenos Aires, III. Part X. p. 247 (1888: Patagonia: Straits of Magellan: Falkland Isl.), Part XI. p. 320 (1890: Rio Chico: Chupat Valley); Carabajal, La Patagonia, Part II. p. 282 (1900).

Pterocyanea maculirostris, Gray, Gen. B. III. p. 617 (1845); Reichenb. Syn. Av. Natatores, pl. 89, fig. 181 (1845); Hartl. Ind. Azara, p. 28 (1847); Bibra, Denkschr. Akad. Wien, II. p. 132 (1853: Chili); Pelz. Reise Novara, Vög. p. 139 (1865: Chili).

Pterocyanea versicolor, Bonap. C. R. XLIII. p. 650 (1856).

Querquedula versicolor, Cass. U. S. Astron. Exped. II. Birds, p. 230 (1856: Chili); Scl. P. Z. S. 1860, p. 389 (Falkland Isl.); Abbott, Ibis, 1861, p. 161 (Falkland Isl.); Scl. P. Z. S. 1867, p. 335 (Chili); id. & Salv. P. Z. S. 1868, p. 146 (Buenos Aires); Gray, Handl. B. III. p. 82, no. 10,659 (1871); Scl. & Salv. Nomencl. Av. Neotr. p. 129 (1873); Salv. Trans. Zool. Soc. IV. p. 499 (1876); Scl. & Salv. P. Z. S. 1876, p. 388; Durnf. Ibis, 1877, p. 41 (Chupat Valley, rare), 191 (Baradero, April, common, breeds), 1878, p. 401 (Mouth of Sengelen, breeds); Scl. P. Z. S. 1880, p. 522; Milne-Edwards, Faun. Rég. Austr. Ann. Sci. Nat. (6) XIII. Art. IX. p. 46 (1882); Doering, Expl. al Rio Negro, Zool. Aves, p. 52 (1882); Barrows, Auk, I. p. 274 (1884: Entrerios); Berl. J. f. O. 1887, p. 124; Scl. & Huds. Argent. Orn. II. p. 131 (1889); Ridgw. Proc. U. S. Nat. Mus. XII. p. 138 (1889: Gregory Bay); Holland, Ibis, 1890, p. 425 (Buenos Aires); Oust. Miss. Scient. Cap Horn, Oiseaux, p. 207 (1891); Graham Kerr, Ibis, 1892, p. 146 (Fortin Donovan); Holland, t. c. p. 207 (Estancia Espartilla, common resident, breeds in Sept.); James, New List, Chil. B. p. 9 (1892); Alpin, Ibis, 1894, p. 200 (Uruguay); Salvad. Cat. B. Brit. Mus. XXVII. p. 291 (1895); Lane, Ibis, 1897, p. 193 (Rio Bueno); Sharpe, Hand-list B. I. p. 220 (1899); Salvad. Ann. Mus. Genov. (2) XX. p. 632 (1900: Punta Delgada, July); Martens, Hamb. Magalh. Sammelr. Vög. p. 25 (1900: Patagonia: Falkland Islands).

Anas (Pterocyanea) maculirostris, Burm. J. f. O. 1860, p. 266 (Mendoza); id. La Plata Reise, II. p. 516 (1861).

Pterocyanea fratensis, Eyton, Syn. Anat. p. 65 (1869).

GENERAL DESCRIPTION.

Size.—Adult male, 7976, P. U. O. C. Arroyo Eke, Patagonia, 9th April, 1898, A. E. Colburn. Total length, 16.4 inches.

Wing, 7.5.

Culmen, 1.7.

Tail, 3.5.

Tarsus, 1.2.

Color.—(Male cited.) General color: Brown in varying shades, becoming black and white in sharply contrasted barring of black and white on the posterior half both above and below.

FIG. 236.



Querquedula versicolor. Male.
P. U. O. C. 7976. Profile of head. Reduced.

FIG. 237.



The same: bill from above.
Reduced.

Head: With a seal-brown cap or hood extending from the forehead to well down on the nape and reaching below the eyes; sides of the face and head buffy dirty white; the two color areas of the head are in abrupt contrast and do not blend.

Neck: Buffy isabeline white, sometimes immaculate on the chin and upper throat, but generally each feather is bordered with a very narrow band of seal-brown, giving a barred or flecked, or in places a vermiculated appearance; these markings are best defined on the lower neck both above and below.

Back: Mantle dappled; the feathers are black or dusky seal-brown, each being tipped with buffy and crossed with *two* distinct bars of the same color. Lower back, rump and upper tail-coverts barred black and white; the white bars are well defined but very narrow on the lower back, the black bars or areas being five or six times as wide; on the rump

the relative width of the bars is more nearly equal and on the upper tail-feathers the barring is apparently divided evenly; the upper tail-coverts reach almost to the ends of the rectrices, hiding the tail.

Tail: Seal-brown, flecked, partially barred or more often vermiculated with white markings; below, all the rectrices present a vermiculated appearance, the proportions of black and white being nearly alike.

Wings: The scapulars are dappled and like the mantle in color; each feather is dull seal-brown or black, tipped with strong buffy and crossed by *two or three* bars of the same color. Primaries dark seal-brown; secondaries with a glossy metallic green speculum, having a subapical black band and a terminal white margin posteriorly; the upper wing coverts are slaty, forming a distinct shoulder-patch of that color when the wing is closed; the greater row of the upper wing-coverts with broad white tips, forming the anterior margin of the speculum; these feathers show some greenish iridescence above the white band; longer tertials seal-brown, with central stripings of buffy white on each feather; under wing-coverts slaty, the central ones and the axillaries being white.

Lower parts: The breast strong buff; each feather with a terminal spot of seal-brown and with one or more bars of the same shade; the forward part of the sides is similar in color, but has more the effect of being strongly barred; the abdomen and vent are finely black and white barred, as are the lower tail-coverts, which extend to the end and hide the rectrices below; the flanks are broadly and evenly barred with clear white and black.

Bill: Blackish blue with an orange spot at the base of the upper mandible on either side.

FIG. 238.



Querquedula versicolor. Male. P. U. O. C. 7976. Foot and webs from in front. Reduced.

Feet: "Legs and feet green, black webs" (Durnford).

Iris: "White" (Durnford).

Adult female: In a very considerable series the females seem to average a little duller in color than the males, while the speculum is less brilliant.

Young birds of the year lack the green speculum, it being replaced by grey, and there is no subapical black band; they are duller than the adult females and the barring and mottling are not so definite.

No young birds in the down are in the collections.

Geographical Range.—Southern Brazil, Paraguay, Uruguay, Argentina, Chili, Patagonia, Magellan Straits and the Falkland Islands.

In April, 1898, this duck was not uncommon and a small series was secured, both adults and young of the year of both sexes. These birds were taken at Arroyo Eke and on the Rio Chico, both points not far distant from the eastern coast. The birds were in flocks and showed no signs of breeding at this season. Holland found it breeding in September at Estancia Espartilla, where the bird is resident and common. In the vicinity of Buenos Aires the birds are also resident and the Princeton University Collections have specimens from that region taken in November. The adults are then in very fine plumage and look as if they had moulted very recently.

While the birds appear to be resident in the Province of Buenos Aires, Mr. Alpin found them migratory in Uruguay and his account is subjoined. Mr. Barrows found them to be resident at Concepcion del Uruguay, where he thinks but few remain to breed, though it was the commonest and tamest of the ducks found there. He also saw these birds commonly on the Pampas wherever there was water.

"Did not put in an appearance until April, and I saw it on a few subsequent occasions; once they were with Shovelers, at another time a bunch of five were by themselves, and at another (a sunny autumn afternoon) we stopped our horses to admire a lovely laguna in which the trees, with which the opposite bank was heavily wooded, were clearly reflected, the smooth water being broken only by patches of broad-leaved water-plants and the rippling track of a very tame Grey Teal, while a Cooi Heron, which had been perched on a dead branch, flapped slowly down the river. Such scenes do not readily fade from the memory." (O. V. Alpin, *Birds of Uruguay*, Ibis, p. 200, 1894.)

QUERQUEDULA CYANOPTERA (Vieillot).

Pato alas azulas, Azara, *Apunt.* III. p. 437 (1805).

Anas cyanoptera, Vieill. N. Dict. D'Hist. Nat. V. p. 104 (1816); Burm.

La Plata Reise, II. p. 516 (1861); Frenzel, J. f. O. 1891, p. 125 (Cordoba).

- Anas rafflesii*, King, Zool. Journ. IV. p. 97 (1828: Straits of Magellan), Suppl. pl. 29; Jard. & Selb. Illustr. Orn. n. s. pl. 23 (1838).
- Cyanopterus rafflesii*, Eyton, Mon. Anat. pp. 132, 138 (1838).
- Querquedula cæruleata*, Fraser, P. Z. S. 1843, p. 118 (Chili); Gray, List B. Brit. Mus. Part III. p. 138 (1844); Yarrell, P. Z. S. 1847, p. 54 (egg); Des Murs in Gay's Hist. Chil. Zool. I. p. 452 (1847); Hartl. Naum. 1853, pp. 217, 222 (Valdivia); Gould, P. Z. S. 1859, p. 95 (Falkland Isl.); Leybold, Excurs. Pamp. Arjent. pp. 20, 62 (1873); Phil. Orn. IV. p. 160 (1888: Antofagasto).
- Anas cæruleata*, "Licht. in Mus. Berol." Bibra, Denkschr. Akad. Wien, V. p. 131 (1853: Chili).
- Pterocyanca cæruleata*, Gray, Gen. B. III. p. 617 (1845); Reichenb. Syn. Av. Natatores, pl. 89, fig. 178 (1845); pl. 90, fig. 2337 (1850); Hartl. Ind. Azara, p. 27 (1847); Licht. Nomencl. Av. Mus. Berol. p. 102 (1854: Chili); Pelz. Reise Novara, Vög. p. 139 (1865: Chili); Phil. & Landb. Cat. Av. Chil. p. 42 (1868).
- Pterocyanca rafflesii*, Baird in Stansbury's Rep. p. 322 (1852); Eyton, Syn. Anat. p. 88 (1869).
- Querquedula cyanoptera*, Scl. P. Z. S. 1855, p. 164; Cass. U. S. Astron. Exped. II. Birds, p. 202 (1856); Scl. P. Z. S. 1860, p. 389 (Falkland Isl.); Abbott, Ibis, 1861, p. 161; Scl. P. Z. S. 1867, p. 335 (Chili); id. & Salv. Ibis, 1868, p. 189 (Sandy Point); iid. P. Z. S. 1869, p. 160 (Buenos Aires); Gray, Handl. B. III. p. 83, no. 10657 (1871); Cunningh. Nat. Hist. Str. Magell. p. 215 (1871); Scl. & Salv. Nomencl. Av. Neotr. p. 129 (1873); Durnf. Ibis, 1876, p. 163 (Buenos Aires, May–Sept.), 1877, p. 41 (Chupat Valley, Nov.), p. 191 (Baradero, April, common) 1878, p. 401 (Mouth of Sengel, resident but rare); Scl. P. Z. S. 1880, p. 522; Sharpe, P. Z. S. 1881, p. 14 (Talcachmano); Milne-Edwards, Faun. Rég. Austr. Ann. Sci. Nat. (6) XIII, Art. ix. p. 46 (1882); White, P. Z. S. 1882, p. 625 (Fuerte de Andalgala); Doering, Expl. al Rio Negro, Zool. Aves, p. 53 (1882; Rio Colorado); Barrows, Auk, I. p. 273 (1884; Pampas); Scl. P. Z. S. 1886, p. 401 (Tarapacá); Berl. J. f. O. 1887, p. 133; Scl. & Huds. Argent. Orn. II. p. 130 (1889); Holland, Ibis, 1890, p. 425 (Buenos Aires); Scl. P. Z. S. 1891, p. 136 (Tarapacá); Oust. Miss. Sci. Cap Horn, Oiseaux, p. 203 (1891); Graham Kerr, Ibis, 1892, p. 146 (Fortin Donovan, Pilcomayo); Holland, t. c. p. 206 (Estancia

Espartilla, common, Feb. to Oct.); James, New List, Chil. B. p. 9 (1892); Aplin, Ibis, 1894, p. 200 (Uruguay); Salvad. Cat. B. Brit. Mus. XXVII. p. 303 (1895); Lane, Ibis, 1897, p. 193 (Sacaya, breeding; Sitani); Schalow, Zool. Jahrb. Suppl. IV. p. 676 (1898: Ovalle, Oct.: La Serena); Sharpe, Hand-list, B. I. p. 221 (1899); Carabajal, La Patagonia, Part II. p. 281 (1900); Salvad. Ann. Mus. Genov. (2) XX. p. 632 (1900: Punta Arenas, May); Martens, Hamb. Magalh. Sammelr. Vög. p. 25 (1900; Patagonia: Falkland Islands).

Anas (Pterocyanea) caeruleata, Burm. J. f. O. 1860, p. 266 (Mendoza: Paraná).

Pterocyanea cyanoptera, Burm. P. Z. S. 1872, p. 368 (Argent. Rep.); id. An. Mus. Nac. Buenos Aires, III. Part X. p. 247 (1888: Patagonia).

GENERAL DESCRIPTION.

Size.—Adult male, P. U. O. C. 8668; La Plata, Argentina, July, 1898, S. Pozzi, Collector.

Total length, about 18.25 inches.

Wing, 7.95.

Culmen, 2.1.

Tail, 3.6.

Tarsus, 1.3.

The female is a little smaller than the male and wholly unlike in color.

FIG. 239.



Querquedula cyanoptera. Male. P. U. O. C. 8668. Profile of head and neck. Reduced.

FIG. 240.



Querquedula cyanoptera. Male. P. U. O. C. 8668. Crown of head and bill from above. Reduced.

Color.—(Male cited.) General color: Bright cinnamon-chestnut, varied with dusky on the mantle, and with the entire shoulder pastel-blue; the outer web of two or more of the outer scapulars similar in tone.

Head : A cap reaching from the base of the culmen, back between the eyes, but above them, to the occiput, dusky seal-brown ; the rest of the head bright, immaculate cinnamon-chestnut.

Neck : Concolor with the cinnamon-chestnut of the head ; this is immaculate, but some individuals have a decided shading of seal-brown on the chin.

Back : Mantle, lower back, rump and upper tail-coverts dusky seal-brown, with pale narrow margins of buffy cinnamon to each feather.

Tail : Dusky seal-brown, with narrow margins of dull buff to each feather. Seen from beneath, the rectrices are much lighter in tone and the margins better defined and clearer.

Wings : Scapulars dull seal-brown, barred with three or more bands of chestnut, the same tone as that of the head and neck ; the longer scapulars are pointed, narrow and dusky seal-brown in color, with median stripes of buffy ; two or more of the outer long scapulars have their outer webs pastel-blue like the wing-coverts ; these feathers may or may not have median buffy stripes and defined inner webs of dusky seal-brown ; primaries dusky seal-brown, lighter toward the tips ; secondaries with metallic green areas near their ends and more than an inch and three quarters exposed, forming a wing-speculum ; there is a very narrow line or border of white defining this posteriorly and the greater row of wing-coverts, brownish with broad pure white tips, form the anterior margin of the speculum ; longer tertials deep seal-brown, with buffy median stripes ; wing-coverts, except the greater series, pastel-blue, forming a blue shoulder when the wing is closed ; outer under wing-coverts dull brown, with more or less bluish shading and with whitish tips ; the inner under wing-coverts and axillaries white.

Lower parts : Rich cinnamon-chestnut, generally immaculate throughout ; sometimes the belly is shaded with obscure blackish and the longer feathers of the flanks are dotted and marked with dusky seal-brown in some individuals ; the lower tail-coverts are deep chestnut, shading frequently into seal-brown.

Bill : Black, shaded with invisible dark green in adults ; dark, with lighter greyish areas in birds of the year.

Iris : Yellow ; or dark hazel, varying with age and season.

Feet : Yellow or orange ; or light brown in birds of the year.

Adult female : Head, neck and lower parts dull buffy or brownish white,

generally washed with dull cinnamon; the head and neck flecked with narrow dusky markings, except on the chin and upper throat; there is a decided shading on the pileum, and an indistinct dusky stripe through the eye, formed by a concentration of the dusky streaking; the rest of the lower parts more or less spotted with dusky markings, the belly often being immaculate; most birds show a decided tinge of chestnut below; the upper parts are dusky brown varied with dull buff; the wings are similar to those of the male, but are duller and the speculum is obscured and the white boundaries not so broad and clear; the longer scapulars lack the median stripings (adult female, 8933, P. U. O. C., Province Buenos Aires, October, 1897).

Young birds of the year resemble the female, but the lower parts are not so definitely or heavily marked and present rather a streaked or narrow barred appearance.

Geographical Range.—Western North America from the Columbia River and southern Canada southward; Oregon, California, Utah, Colorado, Nevada, Arizona, etc.; northwestern South America and the whole of southern South America; Peru, Chili, Paraguay, Uruguay, Argentina, Patagonia, Straits of Magellan and the Falkland Islands.

This teal was not secured by Mr. Hatcher or his assistants in Patagonia; the several birds which have formed a basis for the foregoing description were southern examples from the Province of Buenos Aires in Argentina, as well as the series of these ducks in the British Museum.

There are eggs in the collection of the British Museum of the Cinnamon Teal, taken at Salt Lake, Utah, on the twenty-first of May; there are other sets taken at Sacaya, Tarapacá, North Chili, on January 23d; at a point in central Chili in October; and in the Argentine Republic in November.

The birds appear to be resident in both North and South America; in California they are found throughout the year and also in the central regions of the Argentine Republic. That there is a large element of migratory birds passing through in each of the countries where there are always some present, cannot be doubted; and further, so far as the present data go, we are warranted in believing that the representatives of this duck in the regions south of the equator which are migratory, migrate to the south, in their annual pilgrimages; while the migratory representatives

of the species north of the equator, and they seem by far the larger element, make an annual journey to the north, returning again to winter quarters north of the equator, chiefly in Mexico and the southwestern regions of the United States.

"A specimen of a most beautiful species of teal was this day shot by one of the officers of the 'Spiteful,' and very kindly presented to me by him. This was the *Querquedula cyanoptera*, and the only example of the species ever seen by us in the Strait. Captain King, who briefly described it under the name of *Anas Rafflesii*, gives the 'Strait of Magalhaens and western coast to Chiloe' as localities where the species occurs, but does not state whether he often met with it, and it had never been previously observed by the governor of Sandy Point, to whom I exhibited it." (Nat. Hist., Strait of Magellan, Cunningham, p. 215. Gregory Bay, Straits of Magellan, May 10.)

"Male: Talcahuano, September 10, 1879. Iris yellow; bill black; legs and feet yellow; males dark.

"Male: Talcahuano, September, 1879. Eyes yellow; bill black; legs yellow.

"Female: Talcahuano, September 22, 1879. Eyes brown; bill dark, with gray patches; legs light brown." (Sharpe, P. Z. S. 1881, p. 14.)

Genus SPATULA Boie.

Type.

Spatula, Boie, Isis, 1822, p. 564; Salvadori, Cat. Bds. Brit.

Mus. XXVII. p. 306 (1895); Sharpe, Hand-list Bds. I. p.

221 (1899) *S. clypeata*.

Rhynchaspis, Leach, MS.; Steph. Gen. Zool. XII. 2, p. 114

(1824) *S. clypeata*.

Spatulea, Flem. Brit. Anim. p. 123 (1828) *S. clypeata*.

Clypeata (subgen.), Less. Man. d'Orn. II. p. 416 (1828) *S. clypeata*.

Clypeata, "Boie," Brehm, Isis, 1830, p. 997 *S. clypeata*.

Anas, Sw. (nec Linn.) Faun. Bor.-Am. II. p. 439 (1831) *S. clypeata*.

Geographical Range.—Throughout the world.

SPATULA PLATALEA (Vieillot).

Pato espátula, Azara, Apunt. III. p. 427 (1805: Buenos Aires).

Anas platalea, Vieill. N. Dict. d'Hist. Nat. V. p. 157 (1816: ex Azara);

- Burm. La Plata Reise, II. p. 517 (1861: Paraná: Buenos Aires); Schl. Mus. Pays Bas, VI. Anseres, p. 35 (1866).
- Spatula platalea*, Boie, Isis, 1826, p. 980; Hartl. Ind. Azara, p. 27 (1847); Scl. P. Z. S. 1867, p. 335 (Chili); Scl. & Salv. P. Z. S. 1868, p. 145 (Conchitas); Gray, Handl. B. III. p. 85, no. 10678 (1871); Burm. P. Z. S. 1872, p. 368 (Argent. Rep.); Scl. & Salv. Nomencl. Av. Neotr. p. 130 (1873: Falkland Isl.); Durnf. Ibis, 1876, p. 163 (Buenos Aires), 1877, p. 41 (Chupat Valley, breeds), 1878, p. 401 (Sengel & Sengelen rivers, common resident); Scl. & Salv. P. Z. S. 1878, p. 436 (Sandy Point); Scl. P. Z. S. 1880, p. 523; Scl. & Salv. Voy. Chall. II. Birds, p. 107 (1881: Sandy Point); White, P. Z. S. 1882, p. 625 (Argentina); Barrows, Auk, I. p. 274 (1884: Carhué: Pampas); Berl. J. f. O. 1887, p. 124; Trist. Cat. Coll. B. p. 48 (1889); Scl. & Huds. Argent. Orn. II. p. 136 (1889); Holland, Ibis, 1890, p. 425 (Buenos Aires); Frenzel, J. f. O. 1891, p. 125 (Córdoba); Graham Kerr, Ibis, 1892, p. 146 (Pilcomayo); Holland, t. c. p. 208 (Estancia Espartilla, common resident); James, New List Chil. B. p. 9 (1892); Aplin, Ibis, 1894, p. 201 (Uruguay); Salvad. Cat. B. Brit. Mus. XXVII. p. 316 (1895); Lane, Ibis, 1897, p. 197 (Rio Pilmaiguen: Rio Bueno, Dec. to March); Sharpe, Hand-list B. I. p. 221 (1899); Martens, Hamb. Magalh. Sammelr. Vög. p. 25 (1900: Patagonia: Falkland Islands).
- Rhynchaspis maculatus*, Gould, Ms. Jard. & Selb. Illustr. Orn. III. pl. 147 (1835); Gould, Voy. Beagle, Birds, p. 135 (1841); Fraser, P. Z. S. 1843, p. 118 (Chili); Yarrell, P. Z. S. 1847, p. 54 (Chili, egg); Des Murs in Gay's Hist. Chile, Zool. I. p. 454 (1847); Hartl. Naum. 1853, p. 222 (Valdivia); Phil. & Landb. Cat. Av. Chil. p. 43 (1868); Lataste, Actes Soc. Scient. Chil., III. p. cxv (1893: Colchagua, Jan.); Waugh & Lataste, op. cit. IV. p. lxxxix (1894: Peñaflores).
- Rhynchaspis maculata*, Hartl. Verz. Ges. Mus. p. 120 (1844).
- Spatula rhynchotis* (part); Gray, List B. Brit. Mus. Part III. p. 140 (1844); id. Gen. B. III. p. 618 (1845).
- Dafila caesioscapula*, Reichenb. Syn. Av. Natatores, pl. 51 fig. 180 (1845).
- Dafila caesioscapulata*, Bibra. Denkschr. Akad. Wien, V. p. 131 (1853: Chili).
- Rhynchaspis mexicana*, Licht. (nec Gm.) Nomencl. Av. Mus. Berol. p. 102 (1854: Montevideo).

Rhynchaspis platalea, Bp. C. R. XLIII. p. 650 (1856).

Spatula maculatus, Gould, P. Z. S. 1856, p. 95.

Spatula (Rhynchaspis) maculata, Pelz. Reis. Novara, Vög. p. 139 (1865: Chili).

GENERAL DESCRIPTION.

Size.—Male adult 7810 P. U. O. C., Rio Coy, Patagonia, 10th January, 1898. A. E. Colburn.

Total length, about 20 inches.

Wing, 8.8.

Culmen, 2.75.

Tail, 5.25.

Tarsus, 1.6.

The adult female is a little smaller than the adult male and wholly different in color.

Color.—(Male cited.) General color: Browns and chestnut of varying shade, spotted, flecked, or barred with dusky seal-brown or black; shoulders pastel-blue; under parts bright chestnut.

FIG. 241.



Spatula platalea. Male. P. U. O. C. 7810.
Profile of head and neck. Reduced.

FIG. 242.



Spatula platalea. Male. P. U. O. C. 7810.
Crown of head and bill from above. Reduced.

Head: A narrow, seal-brown cap extends from the base of the culmen to the occiput, but is confined to the top of the head and does not reach down to the eyes, each feather bordered with pale buffy; the rest of the head buffy, with slight rufescent shading, each feather spotted with fine seal-brown, arrow-shaped markings.

Neck: Like the sides of the head in color and marking; the markings are heaviest on the nape and finest on the throat; the chin is immaculate buff, inclined to whitish.

Back: Mantle pale cinnamon-brown, with black markings, spots, or bars, in varying number on each feather; lower back, rump and upper tail-coverts dark seal-brown, almost black, the feathers glossy and with faint pale edges. There is a concealed white spot at the base of the tail on either side.

Tail: Dark seal-brown, somewhat lighter than the rump, each feather with a conspicuous buffy white edging on the outer web; seen from below, the rectrices are grayish and the edging is not prominent.

Wings: Shorter scapulars cinnamon-reddish like the back and marked in the same way, but broader; the longer scapulars dark seal-brown, with a decided greenish gloss, a central buff stripe and often cinnamon-reddish edges; primaries dull seal-brown, with greenish reflections on both inner and outer webs near their tips; secondaries with a broad area of glossy green, forming a marked wing-speculum, *with no defined posterior margin*; the inner secondaries have peacock-blue iridescence; the wing-coverts are pastel-blue and form a shoulder of that color when the wing is closed, the last row have broad white tips, forming a white anterior band defining the speculum; tertials dull seal-brown, with buffy white shafts and greenish gloss to the outer webs; the marginal under wing-coverts are grayish, with a strong blue tinge; the rest of the under coverts and axillaries white.

FIG. 243.



Spatula platalea. Male. P. U. O. C. 7810. Foot and webs from in front. Reduced.

Lower parts: Breast pale cinnamon-reddish, each feather with several round, dusky seal-brown spots or marks; this color shades into bright cinnamon-chestnut on the chest, abdomen and flanks, all the feathers being spotted, marked or barred with dull seal-brown; the under tail-coverts are dark glossy seal-brown.

Bill: Black, shaded with dark green.

Feet: Orange-yellow.

Iris: White in the breeding season; hazel-brown at other times.

Adult Female: Head streaked with buffy and black; the neck similar, but the throat and chin immaculate buffy white; the back brownish, each feather with margins and markings of buffy white; wings much as in the male, except that the blue is duller and the general gloss of green on the secondaries is not so fine; the under parts are dull buff, with a reddish tinge marked with dull brown streaks. Bill greenish olive-brown. Feet dull orange. Iris, hazel-brown.

Young males of the year resemble the females, but the wings are brighter, the bill is dull reddish brown and the legs and feet pale pinkish or pinkish brown.

The bill of the female of *Spatula platalea* is a little shorter than that of *S. clypeata* and is darker colored in dried skins, with no yellowish or orange shadings, such as are apparent in *clypeata* under like conditions. Otherwise the two birds are much alike and difficult to distinguish from one another; but as the two species do not appear to overlap at any point, the locality where birds occur or are taken should be a determining factor in characterizing them.

Geographical Range.—South America from Uruguay and southern Peru southward to the Straits of Magellan; Patagonia and the Falkland Islands.

This duck was procured by Mr. Colburn on the trip made to Patagonia in 1898, when he brought specimens from the Rio Coy, in the southeastern part of the province and not far from the coast, late in January. That the breeding season was past is evident from the plumage, which is worn and had not been renewed. Eggs in the British Museum collections have been taken in central Chili in early November and in northern Argentina in the same month. Mr. Barrows met the birds on the pampas of northern Argentina in the winter only and says "it was by far the most numerous of the Ducks, being often seen in flocks of one or two hundred." Mr. James gives it however as a common resident at Estancia Espartilla and it seems probable from the available data that it is resident except in the extremes of its range, referring to the birds in the vicinity of the Straits of Magellan and the representatives occurring in the Falklands.

"694, male, Sandy Point.

"Eyes white, bill black, feet yellow; stomach had pebbles, &c."
(Sclater & Salvin, on Birds Antarctic America, Voy. H. M. S. "Chall."—
No. ix. p. 436, 1878.)

Subfamily *FULIGULINÆ*.

Salvad. Cat. Bds. Brit. Mus. XXVII. p. 326 (1895); Sharpe, Hand-List
Bds. I. p. 222 (1899).

Genus *METOPIANA* Bp.

Type.

Metopiana, Bp. Compt. Rend. XLIII. p. 649, gen. 26
(1856); Salvadori, Cat. Bds. Brit. Mus. XXVII. p.
332 (1895); Sharpe, Hand-List Bds. I. p. 222 (1899) *M. peposaca*.
Metopias, Heine, Nom. Mus. Hein. Orn. p. 347 (1890).

Geographical Range.—Peculiar to South America.

METOPIANA PEPOSACA (Vieillot).

Pato negrizco ala blanca, Azara, Apunt. III. p. 423 (1805: Paraguay &
Buenos Aires).
Anas peposaca, Vieill. N. Dict. d'Hist. Nat. V. p. 132 (1816); Hartl.
Ind. Azara, p. 27 (1847); Burm. J. f. O. 1860, p. 267; id. La Plata
Reise, II. p. 518 (1861: Rio Paraná).
Anas mepotias, Pöppig, Fror. Notiz. xxxii. no. 529 p. 9 (1829); id.
Fragm. Zool. Itin. Chil. p. 10 (1829).
Milouin en deuil, Less. Traité d'Orn. p. 632 (1831); Pucheran, Rev. et
Mag. de Zool. 1850, p. 636; Hartl. J. f. O. 1855, p. 420.
Anas albipennis, Licht.; Meyen, Nova Acta XVI, Suppl. p. 119 (1833);
Licht. Nomencl. Av. Mus. Berol. p. 101 (1854: Montevideo).
Fuligula metopias, Gray, List B. Brit. Mus. Part III. p. 143 (1844); id.
Gen. B. III. p. 621 (1844); Des Murs in Gay's Hist. Chil. Zool. I.
p. 456 (1847); Hartl. Naum. 1853, pp. 217, 222 (Valdivia); Cass.
U. S. Astron. Exped. II. Birds, p. 204, pl. 27 (1856); Phil. &
Landb. Cat. Av. Chil. p. 43 (1868).

Fuligula albipennis, Reichenb. Syn. Av. Natatores, pl. CCLXXXV fig. 2350 (1850); Bibra, Denkschr. Ak. Wien, V. p. 132 (1853: Chili); Pelz. Reise Novara, Vög. p. 139 (1865: Chili).

Metopiana pefosaca, Bonap. C. R. XLIII. p. 649 (1856); Scl. & Salv. P. Z. S. 1868, p. 146 (Conchilas); Scl. P. Z. S. 1870, p. 666, pl. XXXVII; Gray, Handl. B. III. p. 87, no. 10695 (1871); Burm. P. Z. S. 1872, p. 368 (Patagonia: Buenos Aires: Paraná); Garrod, P. Z. S. 1873, pp. 467, 639; Scl. & Salv. Nomencl. Av. Neotr. p. 130 (1873); Salv. Ibis, 1874, p. 319; Garrod, P. Z. S. 1875, pp. 154, 156; Scl. & Salv. P. Z. S. 1876, p. 398; Durnf. Ibis, 1876, p. 163, 1877, p. 192 (Buenos Aires, common in winter), 1878, p. 65; Scl. P. Z. S. 1880, p. 524; White, P. Z. S. 1882, p. 625; Barrows, Auk, V. p. 274 (1884); Berl. J. f. O. 1887, p. 124; Scl. & Huds. Argent. Orn. II. p. 137 (1889); Graham Kerr, Ibis, 1890, p. 358; Holland, t. c. p. 425; Frenzel, J. f. O. 1891, p. 125 (Córdoba); Holland, Ibis, 1892, pp. 206, 208, 210 (Estancia Espartilla, common resident, breeds Sept. to Nov.); James, New List Chil. B. p. 10 (1892); Aplin. Ibis, 1894, p. 201 (Uruguay); Salvad. Cat. B. Brit. Mus. XXVII. p. 332 (1895); Schalow, Zool. Jahrb. Suppl. IV. p. 674 (1898: Concepcion); Sharpe, Hand-List B. I. p. 222 (1899); Carbajal, La Patagonia, Part II. p. 282 (1900).

Fuligula pefosaca, Schl. Mus. Pays Bas. VI. Anseres, p. 31 (1866); Scl. P. Z. S. 1867, pp. 335, 340.

Metopias pefosaca, Heine & Reichen. Nomencl. Mus. Hein. p. 347 (1890).

GENERAL DESCRIPTION.

Size.—Adult male, 8698 P. U. O. C., Ensenada, Argentina, March, 1895. Total length about 23 inches.

Wing, 10.

Culmen, 2.6.

Tail, 3.2.

Tarsus, 1.7.

The female averages about the same size as the male, but is different in color, though the pattern of coloration is the same.

Color.—(Male cited.) General color. Above velvety black. Below gray.

Head: Immaculate velvety black, with a purple brown gloss.

Neck: Black like the head, except a small triangular spot of white on the chin just at the beginning of the feathered area.

Back: Mantle and lower back dull seal-brown, almost black, finely powdered and vermiculated with buffy white; the rump and upper tail-coverts immaculate, dull, very dark seal-brown, almost black.

FIG. 244.



Metopiana peposaca. Male. P. U. O. C. 8698.
Profile of head and neck. Reduced.

FIG. 245.



Metopiana peposaca. Male. P. U. O. C. 8698.
Bill and head from above. Reduced.

Tail: Dark seal-brown, the outer webs of the outer rectrices vermiculated with grayish; from below, the rectrices have a silvery gray appearance.

Wings: Scapulars dull seal-brown like the mantle and powdered in the same way with minute dotting and vermiculation of buffy white; primaries white, with dark seal-brown tips, and the four or five outer ones have the outer webs dark seal-brown; secondaries white, with broad tips of dull seal-brown, forming a border to the white speculum posteriorly; some of the inner secondaries have the margins of the outer webs narrowly bordered with seal-brown and the white of the outer webs powdered with dusky; tertials dull glossy bottle-green; upper wing-coverts dull seal-brown, powdered and vermiculated very finely with buffy white, the greater series broadly tipped with glossy dark bottle-green, forming a band of that color between the shoulder and the white speculum; the entire shoulder of the closed wing is white at the edge; under wing-coverts white, except some marginal ones, which are blackish; the axillaries are white, the longer ones vermiculated with slaty at their tips.

Lower parts: Breast concolor with the neck, black; chest, sides, flanks and abdomen definitely vermiculated with dull gray and dusky brownish; the whole is glossy and the markings are finer and less definite on the chest and belly, and better defined on the sides and flanks; the under tail-coverts, immaculate white, reach almost to the end of the rectrices, concealing them.

Bill : With a conspicuous wattle at the base, most developed above. Rosy red in the breeding season, with the tip and nail black. At other seasons of the year the bill loses this brilliant shade, being wholly deep yellow, with the wattle at the base orange, or reddish orange of varying intensity ; the tip and nail black. The under mandible is orange-yellow, with a defined black tip.

FIG. 246.



Metopiana peposaca. Male. P. U. O. C. 8698. Foot and webs from in front. Reduced.

Feet : Feet and legs deep yellow.

Iris : Crimson or golden red in the breeding season ; at other seasons brownish red, yellowish red, or clear yellow.

Adult female : 8705 P. U. O. C. Ensenada, Province of Buenos Aires, Argentina, March, 1895. Pozzi Collection. General color snuff-brown in varying shades ; below, the feathers are broadly tipped with white, obscuring the brown of their bases.

Head : Crown and occiput deep seal-brown ; sides of head and face pale snuff-brown, shading into the white of the chin and throat.

Neck : Upper throat and chin isabelline white, almost pure in some individuals ; the rest of the neck concolor with the face and sides of the head and becoming decidedly brighter or more intense, a chestnut shade prevailing where it joins the back and breast.

Back : With some shading of chestnut on the extreme upper part of the mantle, the mantle, upper back, rump, and upper tail-coverts are deep seal-brown, rather glossy, but varying little in tone.

Tail : Deep seal-brown like the back ; seen from below, the rectrices are pale whitish brown.

Wings : Scapulars deep seal-brown, some of the longer ones with a dull greenish gloss ; primaries white, shaded over with pale seal-brown, and tipped with darker seal like the back ; the outer webs of the four or

more outer primaries seal-brown like the back ; secondaries white, overcast with a shading of seal-brown, and with narrow tips of darker seal-brown like the back, the whitish area forming a speculum, defined posteriorly by the dark tips ; the tertials are glossy obscure green ; the upper wing-coverts are deep seal-brown concolor with the back, there is a well defined whitish margin to the shoulder and the greater series of the upper wing-coverts are glossy obscure greenish, forming a boundary anteriorly to the speculum ; the under wing-coverts are whitish, except some darker marginal ones ; the axillaries are white, the longer ones being vermiculated on their tips with pale seal-brown.

Lower parts : Chest deep seal-brown, washed with cinnamon-chestnut ; the breast and anterior lower surface deep seal-brown, each feather so broadly tipped with silvery white as to obscure the ground color, which barely shows through ; the sides and flanks snuff-brown, with a strong chestnut shading ; the belly and vent seal-brown, pale in shade, each feather with the border powdered or vermiculated with silvery whitish ; the lower tail-coverts immaculate white, almost hiding the rectrices.

Bill : With little or no basal wattle. In color blackish, shaded with orange ; nail dark horn-color.

Feet : The feet and legs are brown, shaded with greenish and obscure orange.

Iris : Deep hazel-brown.

The young of the year and downy young are not represented in the collections.

Geographical Range.—Central South America from southern Brazil, Paraguay, Uruguay and northern Chili southward, through Argentina, to Patagonia (Burmeister) ; rare in southern South America.

This duck was not observed or taken by Mr. Hatcher or his assistants in Patagonia and it is doubtful if the bird occurs at all commonly south of the Rio Negro in Argentina. It is common throughout northern Argentina, particularly in the Province of Buenos Aires, where it is resident and breeds in numbers in the interior. In the British Museum there are sets of eggs from this region collected in October (20), and others in November ; a set from central Chili was collected in October. Mr. Barrows in his travels through northern Argentina and Uruguay says of this duck : "Very abundant on the Uruguay in times of freshet and probably

"a few breed about Concepcion, as they certainly stay there all summer. It was met with in a greater or less abundance at every point visited, and was usually found in flocks of from ten to fifty individuals."

"Male. Salto, Buenos Aires, Arg. Rep., Oct. 17, 1881.

"Female. Salto, Buenos Aires, Arg. Rep., Oct. 12, 1881.

"Iris crimson.

"Several of these birds were found in the streams and lagoons. Legs of deep yellow, beak slightly lighter in tint; wattle at the base of the beak a deep orange-red." (E. W. White, P. Z. S., pp. 625-626, 1882.)

"A single male of this beautiful Duck was received in 1867. In 1870 we obtained three pairs from Mr. Weisshaupt's Chilian collections, but they did not breed until 1873.

"*Dates of Hatching of the Rosy-billed Duck.* (In the Zoological Gardens, London.)

1873. July 20th.

1876. July 1st.

1874. " 6th.

1879. " 11th."

1875. September 7th.

(P. L. Sclater, P. Z. S. 1880, p. 524.)

Genus TACHYERES Owen.

Type.

Micropterus (subgen.), Less. Man. d'Orn. p. 416 (1828)

(nec Lacép. 1802); Salvadori, Cat. Bds. Brit. Mus.

XXVII. p. 373 (1895); Sharpe, Hand-list Bds. I. p. 224

(1899) *T. cinereus*.

Micropterus, King, P. Z. S. 1830, p. 15 (nec Lacép. 1802).

Tachyeres, Owen, Trans. Zool. Soc. IX. p. 254 (1875) . *T. cinereus*.

Geographical Range.—The Straits of Magellan, Fuegian coast waters, and the Falkland Islands. North on the Atlantic coast to the Rio Negro, and on the Pacific coast to Chiloe Island and Valdivia.

TACHYERES CINEREUS (Gmelin).

(Plate I.)

Oiseau grise, ou Oie de plein, Pernetty, Vög. II. c. 19, p. 21 (1769: Falkland Isl.).

Race-horse Duck, Pernetty, Journ. pp. 213, 214 (1771).

- Loggerhead, Clayton, Phil. Trans. LXVI. p. 104 (1776); Penrose, Falkland Isl. p. 35; Forster, Voy. II. p. 493 (1777).
- Loggerhead Goose, Lath. Gen. Syn. III. part II. p. 439 (1785).
- Anas cinerea*, Gm. Syst. Nat. I. p. 506 (1788: ex Pernetty, Falkland Isl.).
- Anas brachyptera*, Lath. Ind. Orn. II. p. 834 (1790); Quoy & Gaim. Voy. Uran. Zool. p. 139, pl. 39 (1824); Cunningh. Nat. Hist. Str. Magell. p. 94 (1871).
- Anser cinereus*, Bonn. Enc. Meth. I. p. 112 (1790).
- Anser brachypterus*, Vieill. N. Dict. d'Hist. Nat. XXIII. p. 344 (1818).
- Anas (Micropterus) brachyptera*, Less. Man. d'Orn. II. p. 416 (1828); id. Traité d'Orn. p. 630 (1831).
- Oidemia patachonica*, King, Zool. Journ. IV. p. 100 (1828); Strickl. Ann. & Mag. N. H. VII. p. 39 (1841); Gibson, Pr. Phys. Soc. Edinb. IV. pp. 185, 186 (1878).
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- Micropterus cinereus*, Gray, List Gen. B. p. 74 (1840); id. List B. Brit. Mus. Part III. p. 140 (1844); id. Gen. B. III. p. 623 (1844); Reichenb. Syn. Av. Natatores, pl. 77 fig. 894 (1845); Des Murs in Gay's Hist. Chil. Zool. I. p. 457 (1847); Gould, P. Z. S. 1859, p. 96 (Falkland Isl., egg); Scl. P. Z. S. 1860, p. 389; Abbott, Ibis, 1861, p. 161 (Falkland Isl.); Scl. P. Z. S. 1861, p. 367; Pelz. Reise Novara, Vög. p. 139 (1865: Chiloe); Scl. P. Z. S. 1867, pp. 335, 340; Phil. & Landb. Cat. Av. Chil. p. 43 (1868); Cunningh. Ibis, 1868, p. 127; Scl. & Salv. t. c. p. 189 (Sandy Point); Gigl. t. c. p. 498; Scl. & Salv. Ibis, 1870, p. 499 (Gallegos river); Cunningh.

Nat. Hist. Str. Magell. p. 94 (1871); id. P. Z. S. 1871, p. 262; Trans. Zool. Soc. VII. pp. 493-501 pls. 58-62 (1871: Anatomy); Sci. & Salv. Nomencl. Av. Neotr. p. 130 (1873); Gigl. Viagg. Magenta, pp. 933-963 (1876); Oust. Miss. Sci. Cap Horn, Oiseaux, p. 212 pl. IV. (1891); Lataste, Actes Soc. Scient. Chil. III. p. cxxii. (1893: Str. Magell.).

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Tachyeres brachypterus, Owen, Trans. Zool. Soc. IX. p. 254 (1875).

Tachyeres cinereus, Cunningh. Nat. Hist. Str. Magell. pp. 88, 91, 93 cum tab. p. 154 (1871); Sci. & Salv. P. Z. S. 1876, p. 402, 1878, p. 437 (Messier Channel: Tom Harbour: Port Churrucha: Falkland Isl.); Sci. P. Z. S. 1879, p. 310 (egg), 1880, p. 529; Sharpe, P. Z. S. 1881, p. 13 (Straits of Magellan); Sci. & Salv. Voy. Chall. II. Birds, pp. 107, 150 (1881); Reichen. Orn. Centralbl. 1882, p. 17; Stejn. Stand. Nat. Hist. IV. p. 149 (1885); Macfarl. Ibis, 1887, p. 202; Burm. An. Mus. Nac. Buenos Aires, III. part X. p. 248 (Straits of Magellan: Falkland Isl.: Puerto Deseado); Ridgw. Proc. U. S. Nat. Mus. XII. p. 138 (1889: Elizabeth Isl.); James, New List Chil. B. p. 10 (1892); Salvad. Cat. B. Brit. Mus. XVII. p. 373 (1895); Lane, Ibis, 1897, p. 195 (Corral, Oct. Nov.); Schalow, Zool. Jahrb. Suppl. IV. p. 672 (1898: Calbuco, Dec.); Sharpe, Hand-list B. I. p. 224 (1899); Salvad. Ann. Mus. Genov. (2) XX, p. 633 (1900: Penguin Rookery, Feb.: Rio Pescado, May); Martens, Hamb. Magalh. Sammelr. Vög. p. 25 (1900: Straits of Magellan: Falkland Islands).

Micropterus macropterus, Gigl. Viagg. Magenta, p. 934 (1876).

GENERAL DESCRIPTION.

Size.—Male adult, no. 8847, P. U. O. C. Rio Negro, Patagonia, February, 1898. (From Museo de La Plata in exchange; original number 25.)

Total length, about 29 inches.

Wing, 8.5.

Culmen, 2.3.

Tail, 5.

Tarsus, 2.25.

The adult female bird averages somewhat smaller than the male.

Color. — (Male cited.) General color: Slaty gray, with white wing-bars and abdomen.

Head: Pale gray; darker on the crown and a deeper shade from the base of the bill to back of the eye; upper and lower eyelid white, which is prolonged into a stripe curving slightly downward and extending almost to the occiput, where it gradually narrows to a point and is lost; this marking is definite and in no way obscure or obsolete; sides of the head and face slaty gray, paler than on the crown.

FIG. 247.



Tachyeres cinereus. P. U. O. C. 8847. Adult male. Rio Negro, Patagonia, February, 1898.
Profile of head and neck. Reduced.

Neck: Pale slaty gray like the sides of the head and terminating definitely and abruptly in the darker color of the chest and back; there is an area on the throat, beginning back of the chin on the upper throat and extending half way to the chest, of reddish cinnamon-brown; it is definite and clearly outlined.

Back: Mantle dark slate-gray, each feather with a darker subapical band, giving the scaled appearance; lower back, rump and upper tail-coverts dark slate-gray, without the markings on the mantle; the upper tail-coverts shaded slightly with olive.

Tail: The pointed feathers are graded in length to the longer central ones, which curve upward; they are deep slate-gray from above and paler when seen from beneath.

Wings: There is a single wing-tubercle on each wing, a third of an inch long and pale yellow in coloring. The scapulars like the mantle in color and marking, the longer ones being glossed slightly with olive; primaries deep dusky slate; secondaries pure white; tertials like the longer scapulars; wing-coverts immaculate slate-gray, the greater series tipped with pure white; the marginal under wing-coverts are slate-gray; the rest of the under wing-coverts and axillaries pure white.

Lower parts: Chest and breast dark slate-gray, each feather with a sub-apical band of dusky slate, giving to the whole a scaled appearance; sides like the breast, the longer feathers of the flanks washed with olive; abdomen and under tail-coverts pure white, the change from the slate of the sides and breast being abrupt and defined.

Bill: Horn-color, shaded with blue and green, the nail abruptly black.

FIG. 248.



Tachyeres cinereus. P. U. O. C. 8847. Adult male. Foot from in front, showing the webs. Reduced.

Feet: The feet and legs are dull greenish brown, strongly shaded with orange.

Iris: Hazel-brown.

This adult male bird, it will be seen, has different coloring on the bill from that generally described; the bird has nearly completed the moult directly after the breeding season and it is at least two if not three years old, probably more.

The change of color to orange or cadmium-yellow in the breeding season is to be looked for, as similar changes in the colors of the bill occur in other allied sea-ducks.

Adult females of this duck in the collections of the British Museum closely resemble adult males in general color.

After careful study and examination of the material in the British Museum and in the Museum of the Jardin des Plantes in Paris, especially the birds that Dr. Oustalet regarded as a separate species, it appears that the bird called *Micropterus patachonicus* by King, which was the name Dr. Oustalet employed for his second species of micropteros duck, is the immature of *Tachyeres cinereus*, which seems not to attain full adult plumage until at least the second and perhaps the third year of its life; moreover the first breeding is probably accomplished in the phase of plumage called by Dr. Oustalet *M. patachonicus*. (Miss. Sci. Cap Horn, Tome VI, pp. B. 112-232, E. Oustalet, 1891.)

The birds of the year should therefore be described as being much darker than adults, with relatively longer wings and with more washing of brown of a deep shade on both breast and back; they have a similar white marking on the side of the face in the region back of the eye, and the color of the head and neck does not differ from that of the breast and back, while there is no definite area of reddish cinnamon-brown on the throat. The colors of the bill and feet in these birds are very variable and range from pale yellow to brownish green.

Young birds in the down are figured in an accompanying plate (Pl. I). They have the head, breast and upper parts, as well as the sides and flanks, dull slaty gray, with a brownish tone; the abdomen and under parts and two spots on the head behind the eye on either side are white or creamy white.

Geographical Range.—Southern South America on both the Atlantic and Pacific coasts, to about 41° south latitude; Valdivia, Chili, on the Pacific coast and to the Mouth of the Rio Negro, Atlantic coast; more abundant in the Magellan Straits, Fuegian waters and the Falkland Islands; Picton and Hermit Islands and the waters near Cape Horn; common at Chiloe Island.

The "Steamer Duck" or "Race-Horse Duck" was not taken by the naturalists of the Princeton Expeditions, nor do any of the records kept

by Mr Hatcher give intimation of meeting this or allied ducks in the lakes of the interior of Patagonia, and it seems improbable that at the time of year when these observers were in the field that there were ducks of this kind in the waters in question.

A duck of this kind, collected by the naturalists of the Museo de La Plata, in northern Patagonia, in the coast region south of the Rio Negro, has been employed for the basis of the description of the adult male, given above. This greatly extends the Atlantic Coast range of the species from that known up to the present and brings the two coasts of South America nearly even in the north and south distribution of this bird, for it has been taken at the Island of Chiloe and still further north on the coast near Valdivia, which is farther north on the Pacific than is the mouth of the Rio Negro on the Atlantic coast.

Herewith are appended the observations of some of the explorers and naturalists who have been so favored as to become acquainted with the Steamer Duck in its native waters :

"A single specimen of a snipe was, however, procured, as well as an example of that marvellous bird, the Logger-head or steamer-duck, which was suddenly disturbed while it was reposing on the beach, and with great rapidity took to the water, where it was shot, before it had paddled out any great distance, by two of the officers, one of whom afterwards evinced a most commendable zeal for the advancement of science by undressing and swimming out for it. This, our first sight of a bird of which we had heard or read so much, caused great excitement at the time, as we were not then aware that it was one of the most common birds in the Strait." (Sandy Point, December 25, 1866. Cunn. Nat. Hist. Str. Magell. 1871, p. 88.)

"The following day (27th) I was busily occupied all forenoon in skinning the steamer-duck shot on Christmas day; and as I shall frequently refer to the bird in the course of my narrative, I shall offer a few general remarks on its history in this place. The earliest notice of the steamer-duck with which I am acquainted occurs in the voyage of the celebrated Pedro Sarmiento, who visited the Strait in 1582; and in an account of the principal birds of the Strait, describes '*patos pardas y bermejas sin pluma que ne vuelan, sino a vuela pie corren, y par el agua no se pueden levantar sino a vuela pie, dando con las alones a manero de remo. Huyen por el agua con mucha velocidad, y desan un rastro por el agua como un*

bajel quando vaga.' For the next mention of the bird we are indebted to the narrative of the circumnavigation of the world by Oliver van Noort, undertaken sixteen years later. It is there stated, that while in the Strait of Magellan in January 1600, they were driven by a storm into Goose Bay, 'so-called of the store of that Fowle, their found fit for swimming and long diuing, but vnable to flie.' There does not appear to be any mention of the bird either in the voyages of Cavendish or of Drake, nor in those of any of the English navigators until after the middle of the seventeenth century; but in Wood's voyage through the Strait in 1669 reference is made to 'great Blue Ducks, which last are not very shy'—a very brief description, but which applies more to the steamer-duck than to any other bird which he could have encountered. In the following century, the steamer-duck is noticed by several voyagers, and among these, by one of the most scientific navigators the world has ever seen—the celebrated Captain Cook. In his 'Voyage towards the South Pole and round the World, performed by His Majesty's Ships the "Resolution" and "Adventure," in the years 1772, 1773, 1774, and 1775,' he remarks, in his account of Christmas Sound, Tierra del Fuego, that 'here is a kind of duck, called by our people race-horses, on account of the great swiftness with which they run on the water; for they cannot fly, the wings being too short to support the body in the air. This bird is at the Falkland Islands, as appears by Perety's Journal;' and again, in his description of Staten Land: 'Here were ducks, but not many, and some of that sort we called race-horses. We shot some, and found them to weigh twenty-nine or thirty pounds; those who ate of them said they were very good.' The first detailed account, however, of the habits of the steamer-duck is given by that intelligent and accurate observer of nature, Captain Philip Parker King, in his narrative of the voyage of the 'Adventure' and 'Beagle.' He states that, at Eagle Bay, beyond Cape San Isidro, in the Strait of Magellan, he saw, for the first time, 'that most remarkable bird the steamer duck,' and observes that, 'before steamboats were in general use, this bird was denominated, from its swiftness in skimming over the surface of the water, the "race-horse," a name which occurs frequently in Cook's, Byron's, and other voyages. It is a gigantic duck, the largest I have met. It has the lobated hind toe placed far backwards, and other characteristics of the oceanic ducks. The principal peculiarity of this bird is the shortness and remarkably small size of the wings, which, not having

sufficient power to raise the body, serve only to propel it along rather than through the water, and are used like the paddles of a steam-vessel. Aided by these and its strong broad-webbed feet, it moves with astonishing velocity. It would not be an exaggeration to state its speed at from twelve to fifteen miles an hour. The peculiar form of the wing, and the short rigid feathers which cover it, together with the power this bird possesses of remaining a considerable time under water, constitute a striking link between the genera *Anas* and *Aptenodytes*. It has been noticed by many former navigators. The largest we found measured forty inches from the extremity of the bill to that of the tail, and weighed thirteen pounds; but Captain Cook mentions, in his voyage, that the weight of one was twenty-nine pounds. It is very difficult to kill them, on account of their wariness and the thick coat of feathers, which is impenetrable by anything smaller than swan shot. The flavour of their flesh is so strong and fishy, that at first we killed them solely for specimens. Five or six months, however, on salt provisions taught many to think such food palatable, and the seaman never lost an opportunity of eating them. I have preferred these ducks to salt beef, as a preventive against scurvy, rather than from liking their taste.' King also distinguished two species of steamer-duck, whereof one (the *Anas brachyptera* of Latham, *Micropterus brachypterus* of Quoy and Gaimard), was entirely incapable of flight; and the other, which he denominated by the specific name of *Patachonicus*, was stated to be smaller in size than the *Brachypterus*, possessed of volant powers, and differing also in other points relating to plumage. Mr. Darwin, who describes the bird as he saw it at the Falklands, mentions but one species, the original *Anas brachyptera*, which he describes as incapable of flight.

"I will now pass on to offer a few remarks on the bird, as derived from numerous observations which I had opportunity of making with regard to it at the Falkland Islands, in the Strait of Magellan, and on the west coast of Patagonia. At the outset I may state that, though undoubtedly some steamer-ducks fly, and others appear to be either wholly incapable of flight, or do not make use of their faculties in this respect, it is, nevertheless, my belief that there is only one species of the genus *Micropterus*, and that the variations in size, capability of flight, and colouring of plumage, are chiefly dependent on the age of the birds. Secondly, it is my opinion that it is the young birds that can fly, and that the power of flight or the

disposition to fly diminishes with age. I have arrived at this conclusion after the examination of a number of specimens of volant and non-volant birds, having ascertained from a careful inspection of the condition of the skeleton, and other points in the structure of the volant specimens (the plumage of which entirely corresponded with King's short description of *Micropterus Patachonicus*), that they were all immature individuals (probably the young of the year), and having as invariably found that the non-volant specimens were full grown birds.

"The colouring of the plumage of the adult bird may be shortly described as follows: The bill is orange-yellow, with the unguis black. The head is cinereous, becoming gradually paler as the individual increases in age, with a small patch beneath the eye, and a streak above it, nearly white. The whole of the upper surface, the throat, the superior part of the breast, and the wings, with the exception of a white speculum, are lead-gray. The lower part of the breast and abdomen vary from a tint verging on primrose-yellow to pale yellowish-white; and the legs and feet are dark yellow.

"Younger individuals (*M. Patachonicus*) are chiefly distinguished by their smaller size, their greenish-black bills, and prevalence of a reddish-brown hue on the throat and scapulars.

"The average lengths of the adult birds may be stated as about thirty inches, and I do not think that I ever met with specimens measuring more than three feet from the unguis to the tip of the tail; so that I am inclined to believe that the specimen mentioned by King as forty inches in length was of exceptional size, and I feel no doubt that there must have been some mistake as regards the birds stated by Cook as weighing twenty-nine pounds.

"The steamer-duck is very plentiful on the shores of the Falkland Islands, in the Strait of Magellan, and in the channels of Western Patagonia, as well as at Chiloe, which is the northernmost locality where I have seen it. It is generally to be observed in pairs, or small flocks of six or seven individuals, stationed on the rocks, or swimming about in the extensive beds of the 'kelp,' which girdles the coast in many spots; but, occasionally, large flocks, composed of many hundreds are to be met with. When undisturbed in the water they swim quietly along, producing two peculiar notes,—that of the male being a sort of mew rapidly repeated, while that of the female is a kind of deep growl—and diligently search-

ing the fronds of the kelp for the animals to be found thereon, or diving for mussels, which appear to be one of their staple articles of diet, as I always found fragments of the shells in the stomachs of those which I examined. The stomach is a most powerful organ, with very thick muscular coats, and the lower part of the windpipe or trachea of the male possesses an enlargement of considerable size. This, which is likewise to be met with in the males of many other species of ducks, serves to modify the voice. At the Falkland Islands, in common with many other birds, the steamer-ducks are much tamer than they are in the Strait of Magellan, allowing the observer to come within a few yards of them without accelerating their speed. When alarmed at the prospect of impending danger, however, they lose no time in getting up steam, paddling through the water at a marvellous rate by dint of flapping their little wings, the motion of which is so excessively rapid, that it is difficult to convince one's self that they are not revolving, leaving a long wake of foam like that produced by a miniature steamer behind them, and not ceasing this method of progression till a safe distance has intervened between them and the object of their dread. They often assist their escape, in addition, by diving, and coming up to the surface at a distance of many yards in a direction upon which it is impossible to calculate, when they show their great heads for a moment, and then repeat the manoeuvre. Though the rate of their speed has, I think, been considerably over-estimated by Captain King, it is yet so great as to render it impossible for a boat, however well manned, to overtake them, except by hemming them in to some small cove, where a gun may be used with a tolerable chance of success. It is in general in such situations that those birds which can fly take to the wing, and those which cannot have recourse to their diving powers. Even when hit they very frequently escape, for unless they receive a very heavy charge of shot, their coat of down and feathers protects them from serious injury. Their nests, in general placed on a sloping bank near the sea, and under the shelter of a low bush, are formed principally of grass. In these four or five large cream-coloured eggs (the dimensions of which may be roughly stated as three and a half by two and a quarter inches) are deposited, and covered with a layer of soft gray down. The young brood appear to be tended by the parent birds for a considerable period after they leave the egg, and may often be seen swimming after them. Like the old birds, they swim and dive actively, coming up after the plunge at a long dis-

tance. In the Strait and Channels, where only I had an opportunity of observing them, they were, like their parents, very wary. In a specimen shot in the Channels, the entire upper surface of the body, the sides of the head, and a gorget around the lower part of the neck, were covered with grayish-black down, while the under surface and a spot placed obliquely above and behind the eye were white. The bill, legs, and feet were black, with some light-coloured patches along the edges of the toes. The length, from the extremity of the bill to the tip of the tail, was fourteen inches. Ossification proceeds slowly in the bones of the cranium, and many of them continue unanchylosed or separable for a considerable period."

(Sandy Point, 27th December, 1866. Cunn. *op. cit.*, pp. 91-98.)

"The flesh of the steamer is very dark coloured and very strong tasted, so that, after several experiments in cooking it, we agreed in banishing it from our mess-table." (Peckett Harbour, Magellan Straits, 12th February, 1867. Cunn. *op. cit.*, p. 154.)

"Numbers of steamer-ducks were seen, in general too wary to permit of our getting near them, as well as numerous gulls (*Larus dominicanus*) and cormorants, several kelp-geese, and a black oyster-catcher." (Indian Reach, Eden Harbour, Magellan Straits, May 1, 1868. Cunn. *op. cit.*, p. 352.)

"I filled up my spare time in skinning and carefully examining the flying steamer-duck, whose external characters agreed in all respects with King's *Micropterus Patachonicus*, and found, on examination of the skeleton, that it was that of a young bird, the skeleton being imperfectly ossified, and a thick perichondrial layer investing the sternum, which was very thin, rough, and porous in texture." (Cape Fairweather; Patagonia, March 12th, 1869. Cunn. *op. cit.*, p. 475.)

"Steamer-ducks (*Tachyeres cinereus*) are very abundant at Tom Bay, as indeed they are throughout all the western channels. Their English name, 'steamer-duck,' has reference to their habit of moving rapidly along the surface of the water by means of a paddling motion of the wings, and leaving a wake of foam which resembles, on a small scale, that of a paddle-steamer. A great deal has been written about these remarkable birds, and I shall not therefore attempt any general description, which at the best would only involve useless repetition. There are a few remarks about them, however, which I should like to make. Although

aware of the careful investigations made by Dr. Cunningham in 1866-9, and his conclusion as to there being but one species, I have yet some reason to believe that the fliers and the non-flying birds which I have seen belong to two distinct species, and my impression is—though I am by no means sure—that the volant species frequents the fresh waters in the interior of Patagonia, and in the western channels is only represented by an odd straggler. Mr. Cox, of Talcahuano, who has travelled in Araucania and central Patagonia, mentions in his narrative, that in the fresh-water lakes of the latter district there are two different species of steamer-ducks, one of which possesses the power of flight. Immature specimens, although differing in the colour of the bill, and somewhat in plumage, from the adult birds, need not be confounded with a second species. The largest steamer-duck which I have come across weighed only 14 lbs., and although text-books assign a much greater weight as the extreme limit, I think I am right in saying that few heavier birds are met with either in the Straits of Magellan or in the western channels. The female forms a low, oval-shaped nest of twigs, lined with a thick coating of down, and deposits therein six large cream-coloured eggs, $3\frac{3}{4}$ in. long, by $2\frac{1}{4}$ in width. The nest is usually placed on the ground, at the foot of an old tree, some few yards from the beach, but in a place where the bush is almost impenetrable to a human being."

(Tom Bay, Magellan Straits, January, 1897. Coppinger, Cruise, "Alert," 1883, pp. 61-62.)

"(Ad.) Iris black; bill orange, nail black; tarsi and toes orange; webs black; weight $9\frac{1}{4}$ –10 lbs.

"(Juv.) Iris black; bill and feet very dark brown; weight 5 lbs.

"I certainly recognized but one species of Steamer-Duck, and out of a good many dozens met with never saw one fly. In most accounts of this bird it is stated that it rows itself along through the water with its little wings at an incredible rate. It certainly goes very fast, but practically it runs on the water flapping its wings clear of it. It is very wild and its skin is very tough. I found BB's were the only shot that had any effect, and then only at about fifteen yards distance. This duck dives well and remains under water for a considerable time. The immature example obtained was shot by Lord Crawford with a rifle from the deck. Though nearly fully feathered on the back it had no feathers at all on the wings. I saw several examples in down, but was not able to secure one. The

young travel through the water nearly as fast as the adults, in which the muscles of the legs are enormously developed. The call-note of this species, which I only heard uttered when there were young near, was a croaking quack. The pilot who took us through the Straits of Magellan told me that there are not so many of these Ducks there as formerly. I saw only two in the Straits of Magellan, and did not obtain a specimen until we got into Smythe's Channel. The gizzards of those shot contained broken mussel-shells (*Mytilus magellanicus*).” (M. J. Nicoll, Orn. Jour. Voy. Round World, Ibis, 1904, pp. 49-50. February, 1903.)

651, female (young), Messier's Channel.

“Eyes brown; stomach had crabs.”

656, young, Messier's Channel.

“Eyes brown, feet and bill black.”

657, female, Tom Harbour.

“Eyes brown, bill yellow tipped with black, feet yellow; stomach had small pieces of sand.”

678, male, Straits of Magellan.

681, 682, females, Fort Churrucha.

“Weighed 8 lbs. and 8½ lbs.”

725, 726, males (young), Falkland Islands.

“Stomach had shells from the kelp chiefly; bill black, feet yellow-brown.”

There is nothing in the present series which would induce us to question Dr. Cunningham's view, that the “Flying Loggerhead” is the young of the ordinary species before it gets too heavy for flight. Such a specimen as “No. 651, young female,” could evidently accomplish flight, which in large fully adult birds would be probably impossible.

In all the immature birds the bill is uniform black. (Sclater & Salvin, on Birds Antarctic America, Voy. H. M. S. “Chall.,” No. ix. p. 437, 1878.)

“Female: Puerto Buenos. Legs and feet yellow; bill greenish olive; eyes black. Shot on freshwater lake near the sea.

“Walney Sound, February 4, 1879. Weight 10½ lb. Crop full of entire mussels and prawns. Stink intense.” (Sharpe, P. Z. S. 1881, p. 13.)

Subfamily *ERISMATURINÆ*

Salvad. Cat. Bds. Brit. Mus. XXVII. p. 436 (1895); Sharpe, Hand-List Bds. I. p. 226 (1899).

Genus ERISMATURA Bp.

Type.

- Oxyura* (subgen.), Bp. Ann. Lyc. N. Y. II. (1826), p. 390 (1828) (nec *Oxyurus*, Sw. 1827) . . . *E. jamaicensis*.
Erismatura, Bp. Sagg. Distr. Met., Agg. e Corr. p. 143 (1832); Salvadori, Cat. Bds. Brit. Mus. XXVII. p. 441 (1895); Sharpe, Hand-list Bds. I. p. 227 (1899) *E. jamaicensis*.
Cerconectes, Wagl. Isis, 1832, p. 282 . . . *E. leucocephala*.
Gymnura (subgen.), Nutt. Man. II. p. 426 (1834). . . *E. jamaicensis*.
Undina, Gould, B. of Eur. V. pl. 383 (1837) . . . *E. leucocephala*.
Bythouessa, Gloger, Hand- u. Hilfsb. p. 412 (1842) . . . *E. leucocephala*.
Erimistura (errore?), Degl. & Gerbe, Orn. Eur. II. p. 565 (1867).

Geographical Range.—Throughout the world except in eastern Asia, the Malay Archipelago, the Malay Peninsula, India, China and Japan.

ERISMATURA VITTATA Philippi.

- Erismatura ferruginea*, Fraser (nec Eyton), P. Z. S. 1843, p. 119 (Lake of Quintero, Chili); Des Murs in Gay's Hist. Chile, Zool. I. p. 458 (1847); Hartl. Naum. 1853, p. 222 (Valdivia); Bibra, Denkschr. Akad. Wien, V. p. 204 (1853: Chili); Cass. U. S. Astron. Exped. II. Birds, p. 204 (1856); Pelz. Reise Novara. Vög. p. 139 (1865: Chili); Scl. P. Z. S. 1867, pp. 335, 340 (Chili); Phil. & Landb. Cat. Av. Chil. p. 43 (1868); Burm. P. Z. S. 1872, p. 368 (Argent. Rep.); Huds. t. c. p. 549 (Rio Negro, Patagonia); Scl. & Salv. Nomencl. Av. Neotr. p. 131 (1873); Durnf. Ibis, 1876, p. 163 (Montevideo market); Scl. & Salv. P. Z. S. 1876, p. 404; Durnf. Ibis, 1877, p. 42 (Chupat Valley, Nov.), p. 192 (Buenos Aires, resident but scarce); 1878, p. 401 (Central Patagonia, resident, common on the lagoons near the Sengel and Sengelen); Doering, Expl. al Rio Negro, Zool. Aves, p. 54 (1882); Phil. Ornith. IV. p. 160 (1888: Antofagasta); Burm. An. Mus. Nac. Buenos Aires, VI. Part X. p. 248 (1888: Northern Patagonia); Scl. & Huds. Argent. Orn. II. p. 138 (1889); Graham Kerr, Ibis, 1890, p. 359 (Pilcomayo); Frenzel, J. f. O. 1891, p. 125 (Cordoba); James, New List Chil. B. p. 10 (1892); Aplin, Ibis, 1894, p. 201 (Uruguay); Lane, Ibis, 1897, p. 195 (Rio Pilmaiguen); Carbajal, La Patagonia Part II. p. 281 (1900); Martens, Hamb. Magalh. Sammlr. Vög. p. 26 (1900: Patagonia).

Anas cyanorhyncha, Licht. Ms. Hartl. Verz. Ges. Mus. p. 121 (1844).

Anas ferruginea, Burm. Syst. Uebers. III. p. 440 (1856).

Erismatura vittata, Phil. Arch. f. Nat. p. 26 (1860: Chili); Scl. P. Z. S. 1867, p. 335; Phil. P. Z. S. 1868, p. 531; Salvad. Cat. B. Brit. Mus. XXVII. p. 450 (1895); Sharpe, Hand-list B. I. p. 227 (1899).

Biziura ferruginea, Schl. Mus. Pays Bas, VI. Anseres, p. 10 (1866).

GENERAL DESCRIPTION.

Size.—Adult male in the British Museum (d. Province of Santiago, Chili).

Total length, 17 inches.

Wing, 5.7.

Culmen, 1.7.

Tail, 3.5.

Tarsus, 1.2.

The adult female is on the average somewhat smaller than the male and wholly different in color.

Color.—(Adult male.) General color: Chestnut of a bright tone, with a black head.

Head: Shining black.

Neck: Above black like the head; the chin and upper throat black; lower part bright chestnut.

Back: Bright red chestnut, including rump and upper tail-coverts.

Tail: Deep brown, with chestnut shading; the feathers shading to darker at their bases.

Wings: Deeper brown than the back; the scapulars like the back; the upper coverts deep brown, the median coverts washed strongly with chestnut; under wing-coverts slaty, tipped with white; axillaries slaty, edged with whitish.

Lower parts: Breast, sides and flanks bright reddish chestnut, like the back; the breast color shades insensibly into the silvery lower surface, the feathers of the abdomen being deep grayish brown, with silvery white or gray tips almost obscuring the base color; under tail-coverts white, generally with a strong wash of chestnut.

Bill: Dull gray-blue.

Iris: Dark red in the breeding season; deep hazel-brown at other times of year.

Feet : The legs and feet brownish black, with yellow shading.

Adult female : 8994, P. U. O. C. Province of Buenos Aires, Argentina, October, 1897. From the Museo de La Plata, original number 42.

FIG. 249.



Erismatura vittata. Adult female. P. U. O. C. 8994. Profile of head and neck showing color pattern. Reduced.

FIG. 250.



Erismatura vittata. Adult female. P. U. O. C. 8994. Head and bill from above. Reduced.

Head : A cap or hood reaching down over the eyes and to the occiput, deep seal-brown, each feather tipped with chestnut-cinnamon ; an isabelline band of a quarter of an inch in width bounds the cap and becomes narrower after passing below the eye almost joining on the occiput ; a broader band of seal-brown, with cinnamon tips to the feathers, bounds this below, crossing the sides of the face and cheeks.

Neck : The upper neck isabelline, immaculate on the chin and upper throat, then becoming mixed with deep seal-brown feathers, isabelline at their bases, it shades into the seal-brown of the lower neck, where the feathers are tipped with dull buff ; the upper part of the neck, the nape and where it joins the back is immaculate deep seal-brown.

Back : Mantle, upper back, rump and upper tail-coverts deep seal-brown, the tips of each feather deep buff, giving a banded or barred or in places a powdered appearance to the surface ; lower back immaculate seal-brown ; the tail-coverts very short, only concealing the base of the tail.

Tail : Deep seal-brown ; the feathers stiff and about the same shade, below as above.

Wings : Primaries deep seal-brown ; the secondaries the same shade, but powdered on their outer webs with deep buff like the back ; the tertials the same ; scapulars like the back ; the whole upper surface of the body is concolor.

Lower parts : All the feathers with deep seal-brown bases ; on the breast these are tipped strongly with deep buff, which almost obscures the basal

color; the tips of the feathers on the lower surface are polished and shining; the buff tips on the breast assume the appearance of barring on the sides and particularly on the flanks; the tips become whitish and silvery on the abdomen and belly; the under tail-coverts are white and very short.

Bill: Dull gray-blue; the nail yellowish.

Iris: Hazel-brown.

Feet: Dark olive-brown, shaded with yellowish.

FIG. 251.



Erismatura vittata. Immature male. P. U. O. C. 8700. Profile of head and neck, showing color pattern. Reduced.

FIG. 252.



Erismatura vittata. Immature male. P. U. O. C. 8700. Crown of head and bill from above. Reduced.

Young birds of the year of both sexes resemble the female, but are not so deep in coloring; the young males moulting into the first nuptial dress are like females, with the head cap more chestnut, and many bright chestnut feathers among the brown ones; also there is much tinging, barring and shading with chestnut on the brown feathers themselves.

Geographical Range.—Southern South America; chiefly Chili, Uruguay, Argentina and northern and central Patagonia; not recorded from the extreme south of South America or from the Magellan Straits.

While there is more or less seasonal movement on the part of the birds they can hardly be regarded as migrants, for where they occur they are present throughout the year, but in varying abundance at different seasons. There is a set of eggs, among several others, in the collections of the British Museum, probably of this bird, but ascribed to the Falkland Islands as the point where they were collected. In view of the fact that there seem to be no records of the occurrence of the birds in question at that point, it does not seem probable that the data furnished by the collector are correct. (Cat. Birds' Eggs in Brit. Mus. Vol. II, p. 194.)

PATAGONIAN EXPEDITIONS: ZOÖLOGY.

EXPLANATION OF PLATE I.

	PAGE
TACHYERES CINEREUS. A group of young birds in the down. Drawn by H. Grönvold from specimens in the British Museum of Natural History. .	492



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Reports of
The Princeton University Expeditions
to Patagonia, 1896-1899

J. B. HATCHER, IN CHARGE

EDITED BY

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VOLUME II—ORNITHOLOGY

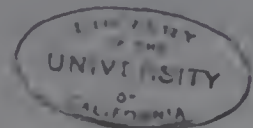
PART IV

ANATIDÆ—TYTODIDÆ

BY

WILLIAM EARLE DODGE SCOTT ASSOCIATED WITH R. BOWDLER SHARPE
PRINCETON UNIVERSITY BRITISH MUSEUM OF NATURAL HISTORY

(Pp. 505-718)



PRINCETON, N. J.
THE UNIVERSITY
STUTT GART

E. SCHWEIZERBART'SCHE VERLAGSHANDLUNG (NÄGELI & DR. SPROESSER)

1915

Issued July 8, 1915.

Order PELECANIFORMES.

Sharpe, Classif. Bds., p. 76 (1891); Sharpe, Hand-List Bds., i. p. 232 (1899).

Family PHALACROCORACIDÆ.

Ogilvie-Grant, Cat. Bds. Brit. Mus., xxvi. p. 330 (1898); Sharpe, Hand-List Bds., i. p. 232 (1899).

Genus PHALACROCORAX Brisson.

Type.

- Phalacrocorax*, Brisson, Orn. vi. p. 511 (1760); Ogilvie-Grant, Cat. Bds. Brit. Mus. xxvi. p. 330 (1898); Sharpe, Hand-list Bds. i. p. 232 (1899) *P. carbo*.
Carbo, Lacepède, Mem. l'Inst. Paris, iii. p. 515 (1801); Meyer & Wolf, Taschenb. Deutsch. Vog. ii. p. 576 (1810) *P. carbo*.
Haliens, Illiger Prodrum, p. 279 (1811) *P. carbo*.
Gulosus, Montagu, Suppl. Orn. Dict. p. 5 of Catalogue at end of vol. (1813) *P. graculus*.
Carbonarius, Rafinesque, Analyse, p. 72 (1815) *P. carbo*.
Hydrocorax, Vieillot (nec Brisson, 1760), Analyse, p. 63 (1816); id. Nouv. Dict. d'Hist. Nat. viii. p. 82 (1817) *P. carbo*.
Graucalus, G. R. Gray (nec Cuvier, 1817), List Gen. B. ed. 2, p. 101 (1841); id. in Dieffenb. Trav. N. Zeal. ii App. p. 201 (1843) *P. carbo*.
Gracalus, G. R. Gray, Voy. Erebus & Terror, Birds, p. 19 (1845) *P. albiventer*.

NOTE.—The authors of Volume II of the Princeton Patagonian Expedition died about the time of the appearance of Part 2—Mr. Scott on August 23, 1910, and Dr. Bowdler Sharpe on December 25, 1909.

Arrangements were then made with Dr. Witmer Stone to see the remainder of the work through the press, and to complete such portions as were left unfinished by the original authors.

The manuscripts left by the latter were practically completed to the end of the Accipitri-formes and these have been published with but little alteration. From this point on, however, Dr. Stone will be responsible for the text, which will be based upon an independent study of the collection and the literature, while making use, so far as possible, of the notes and memoranda left by the former authors.—EDITOR.

Graculus, Reichenb. Nov. Synop. Av. pl. cclxxviii. no.

2304 (1850) *P. javanicus*.

Hypoleucus, Reichenb. Nat. Syst. Vog. p. vii. (1852) . *P. hypoleucus*.

Stictocarbo, Bonap. C. R. xli. p. 1115 (1855). . . . *P. punctatus*.

Sticticarbo, Bonap. Consp. Av. ii. p. 174 (1855). . . *P. gaimardi*.

Urile, Bonap. Consp. Av. ii. p. 175 (1855) *P. bicristatus*.

Leucocarbo, Bonap. Consp. Av. ii. p. 176 (1855) . . *P. bongainvillii*.

Microcarbo, Bonap. Consp. Av. ii. p. 177 (1855). . . *P. melanoleucus*.

Haliator, Heine, J. F. O. 1860, p. 202 *P. pygmæus*.

Melanocarbo, Bernst. Dagboek, p. 119 (1883) . . . *P. melanoleucus*.

Geographical Range.—Nearly cosmopolitan; not found in the Central Pacific.

PHALACROCORAX CIRRIGER King.

Phalacrocorax cirriger, King, Zool. Journ. IV. p. 103 (1829: Straits of Magellan).

Pelicanus goemardi, Gray in Griff. ed. Cuv. Anim. Kingd. III. p. 592 (1829).

Carbo gaimardi, Less. Traité d'Orn. p. 605 (1831: San Lorenzo); Cass. U. S. Expl. Exped. p. 376 (1858: Chili: San Lorenzo, breeding).

Phalacrocorax gaimardi, Fraser, P. Z. S. 1843, p. 119 (Valparaiso Bay); Gray, List Birds part iii. p. 186 (1844: Port St Julian); Hartl. Naum. 1853, p. 219 (Valdivia); Cunn. Nat. Hist. Str. Magell. pp. 365, 432 (1871: Chili); Scl. & Salv. Nomencl. Av. Neotr. p. 124 (1873); Salv. P. Z. S. 1883, p. 427 (San Lorenzo); Tacz. Orn. Pérou, III. p. 431 (1886); Macfarl. Ibis, 1887, p. 207 (Chilian Coasts); Philippi, Ornith. IV. p. 160 (1888: Atacama); Oust. Miss. Scient. Cap Horn, Ois. p. 156 (1891); James, New List Chil. B. p. 8 (1892); Berl. & Stolz. P. Z. S. 1892, p. 399; Lane, Ibis, 1897, p. 187 (Coral, Valdivia); Grant, Cat. B. Brit. Mus. XXVI. p. 353 (1898); Sharpe, Hand-list B. I, p. 232 (1899); Albert, Contr. Estud. Aves Chil. II. p. 355 (1899); Martens, Vög. Hamb. Magalh. Sammelr. Vög. p. 22 (1900).

Graculus gaimardi, Gray, Gen. B. III. p. 667 (1845); Desmurs in Gray Hist. Chil. Zool. I. p. 487 (1847); Reichenb. Syst. Av. Natatores, pl. xxxiii, fig. 370 (1848); Gray, Handl. B. III. p. 129, no. 11141 (1871).

Halicæus gaimardii, Tschudi, Faun. Peru. Orn. p. 313 (1845-46).

Sticticarbo gaimardi, Bonap. Consp. Av. II. p. 174 (1855).

Graculus gaimardii, Schl. Mus. Pays-Bas, VI. Pelic. p. 22 (1863; Coast of Chili); Pelz. Reis. Novara, Vög. p. 158 (1865: Chiloe).

Halicæus cirriger, Burm. An. Mus. Nac. Buenos Aires, part X. p. 249 (1888: South Patagonia).

GENERAL DESCRIPTION.

Size.—Total length, about 28.00 inches.

Wing, 9.7 inches.

Culmen, 2.3 inches.

Tail, 4.0 inches.

Tarsus, 1.9 inches.

Color.—General color, dark smoky grey.

Head: Dark smoky grey; in the breeding season there are some scattered plumules forming a whitish patch.

Neck: Like the head, but generally lighter beneath. There is an elongate white area on either side. In the breeding season there are some whitish plumules like those behind the eye on the front of the neck.

Back: Upper back smoky, becoming silvery grey on the exposed parts, each feather rather broadly margined with dull brownish. Lower back, rump and upper tail coverts dark smoky grey.

Tail: Dull brownish black. Fourteen rectrices.

Wings: All the quills dull brownish black; scapulars smoky, becoming silvery greyish toward the exposed surfaces, each feather margined with dull brown; wing-coverts like the scapulars; lower wing-coverts and axillaries smoky greyish.

Lower parts: Smoky grey, paler than the shade prevailing above.

Bill: "Culmen cadmium-yellow, greenish brown along the top, and shading into orange-vermilion towards the base and on the bare patch in front of the eye; mandible similar but less brightly colored" (A. A. Lane).

Feet: "Legs, feet and webs bright coral red" (A. A. Lane).

Iris: "Iris grey" (A. A. Lane).

The sexes are alike in full plumage.

Young birds of the year are dark brown in general color, the wings and under parts being lighter, with an admixture of whitish feathers.

The white areas on the sides of the neck show plainly in this stage and some feathers of the adult dress are found on the upper back and among the wing-coverts and scapulars.

Geographical Range.—Coasts of Peru and Chili and the Western Reaches of the Straits of Magellan and Fuegian waters; rare or casual in the eastern parts of the Straits.

The naturalists of the Princeton Expeditions did not meet this species of cormorant in their explorations, nor was this to be expected from what we know of the distribution of the birds and their claim to consideration as a part of the fauna of Patagonia; they have been found at Port San Julian on the Atlantic Coast of Patagonia but only casually; they occur at western points in the Straits of Magellan, but there is so far no record of their regular occurrence so far to the eastward even as Sandy Point.

At Chiloe Island, Dr. Cunningham saw these birds and he writes: "The 30th [May] was fair, though still blowing pretty hard. In the forenoon a large flock of very beautiful cormorants (*Phalacrocorax gaimardi*), with bluish grey and white plumage, yellow bills and scarlet legs, lighted on the water not far from the ship, but we were unable to procure one. One of the officers recognized them as specimens of a species of which he had seen two examples on one occasion on the Messier Channel, but there they must be very rare, as I never saw any to the south of Chiloe." (Cunn. Nat. Hist. Strts. Mag. 1871.)

PHALACROCORAX VIGUA (Vieillot).

Zamaragullon negro, Azara, Apunt. iii. p. 393 (1805).

Hydrocorax vigua, Vieill. Nouv. Dict. d'Hist. Nat. VIII. p. 90 (1817, ex Azara.)

Carbo graculus (nec Linn.), Temm. Man. d'Orn. II. p. 897 (1820).

Pelecanus vigua, Vieill. Enc. Méth. I. p. 342 (1823).

Halius brasiliensis, Licht. Verz. Doubl. p. 86 (1823).

Carbo brasiliensis, Spix. Av. Bras. II. p. 83, pl. cvi. (1825).

Phalacrocorax niger, King, Zool. Journ. IV. p. 101 (1829: Straits of Magellan).

Halius brasiliensis, Gray in Griff. ed. Cuv. Anim. Kingd. III. p. 591 (1829).

Carbo mysticallis, Less. Traité d'Orn. p. 604 (1831); Puch. Rev. et Mag. de Zool. 1850, p. 628.

- Phalacrocorax graculus* (nec Linn.), Gould, B. Eur. V. pl. 408 (1837).
Phalacrocorax brasiliensis, Fraser, P. Z. S. 1843, p. 119 (Chili); Macfarl. Ibis, 1887, p. 207 (Coast of Chili); Oust. Miss. Sci. Cap Horn Dis. p. 142 (1891).
Phalacrocorax brasiliannus, Gray, List B. part. iii. p. 185 (1844: Valparaiso).
Graculus brasiliannus, Gray, Gen. B. III. p. 667 (1845); Desmurs, in Gray's Hist. Chil. Zool. I. p. 490 (1847); Reichenb. Syst. Av. Natatores, pl. xxxiii. figs. 881-882 (1848); Coues, Bull. U. S. Nat. Mus. VII. p. 24 (1877: Concepcion Bay, Chili).
Graculus mysticalis, Gray, Gen. B. III. p. 668 (1845).
Phalacrocorax brasiliannus, Hartl. Ind. Azara, p. 27. (1847); id. Naum. 1853, p. 219 (Valdivia); Scl. & Salv. Ibis, 1868, p. 146 (Conchitas), 1870, p. 499 (Goods Bay, Str. Magell.); Cunn. Nat. Hist. Str. Magell. p. 483 (1871); Scl. & Salv. Nomencl. Av. Neotrop. p. 124 (1873); Durnf. Ibis, 1876, p. 162 (Flores Isl., Buenos Aires), 1877, p. 40 (Chuput Valley), p. 188 (Barradero, Buenos Aires), 1878, p. 398 (Sengel and Sengelen); White, P. Z. S. 1882, p. 624 (Salta); Salvin, P. Z. S. 1883, p. 427 (Paracas Bay); Vincig. Patag. p. 26 (1883); id. Boll. Soc. Geogr. Ital. (2) IX. p. 799 (1884); Barrows, Auk, I. p. 270 (1884: Concepcion); Berl. J. f. O. 1887, p. 28 (Rio Pilcomayo); Scl. & Huds. Argent. Orn. II. p. 91 (1889); Graham Kerr, Ibis, 1891, p. 270 (Rio Pilcomayo), 1892, p. 144 (Paraná: Paraguay, Lower Pilcomayo); James, New List Chil. B. p. 8 (1892); Aplin, Ibis, 1894, p. 197 (Flores Isl.; Montevideo; Rio Negro); Lane, Ibis, 1897, p. 186 (Chili); Schalow, Zool. Jahrb. Suppl. IV. p. 688 (1898: Island of Pajaros: Villarica: Lake Llanquihue); Albert, Contr. Estud. Av. Chil. II. p. 358 (1899).
Graculus magellanicus, Reichenb. (nec Gm.) Syst. Av. Natatores, pl. CCCXLIX (1848).
Graculus brasilianna, Bp. Consp. Av. II. p. 172 (1855).
Haliæus brasiliensis, Burm. J. f. O. 1860, p. 267 (Paraná).
Haliæus brasiliannus, Burm. La Plata Reis. II. p. 520 (1861: Rio Paraná); C. Burm. An. Mus. Nac. Buenos Aires, III. part X, p. 249 (1888: Patagonia).
Graculus glaucus, Schl. (nec Reichenb.) Mus. Pays Bas, VI. Pelec. p. 17 (1863: Straits of Magellan).
Graculus brasiliensis, Pelz. Reis. Novara, Vög. p. 158 (1865: Chili); Gray, Hand-list B. III. p. 128, no. 11127 (1871).

Phalacrocorax vigua, Ridgw. Proc. U. S. Nat. Mus. xii. p. 138 (1889: Port Otway, Chili); Grant, Cat. B. Brit. Mus. xxvi. p. 378 (1898); Sharpe, Hand-list B. I. p. 233 (1890); Martens, Hamb. Magalh. Sammelr. Vög. p. 22 (1900); Salvad. Ann. Mus. Genov. (2) xx. p. 627 (1900: Isla de Leones, Santa Cruz, Jan.).

Phalacrocorax sp. Holland, Ibis, 1892, p. 204 (Estancia Espartilla), 1897, p. 168.

Falacrocorax brasiliensis, Carbajal, La Patagonia, part II. p. 277 (1899).

GENERAL DESCRIPTION.

Size.—Adult male, P. U. O. C. 8995, October, 1897, Province of Buenos Aires. From the Museo de La Plata, Original Number, 51.

Total length, about 30.00 inches.

Wing, 11.1 inches.

Culmen, 2.25 inches.

Tail, 7.0 inches.

Tarsus, 2.0 inches.

The adult female is appreciably smaller than the adult male but identical in color and decoration in the breeding season.

Color.—General color: Shining glossy black with a slight greenish tint.

Head: Black; in the breeding season a tuft of decomposed whitish plumules on each side above the ear. There is also a line of similar feathers forming an irregular supraciliary stripe from the lores back.

Neck: Black; a narrow white band defines the upper feathering of the throat where it borders the naked skin of the pouch; this marking reaches up in some specimens almost to the eye; the sides of the neck are decorated with scattered whitish plumules in the breeding season. The gular pouch is dusky yellowish in color.

Back: The middle and lower back, the rump and upper tail-coverts glossy black; the upper back has distinct lanceolate feathers of an ashy shade, each one margined or bordered with black; some of these feathers have a median black line along the shaft.

Tail: Dull black. There are twelve rectrices.

Wings: The quills are brownish black; on the exposed surfaces of the secondaries and tertials this color is obscured by a heavy shading of ash; the scapulars are like the feathers of the upper back, lanceolate in shape,

deep ash in color with narrow margin of black defining each and often a black stripe along the shaft; upper wing-coverts like the scapulars; lower wing-coverts and axillaries dull black.

Lower parts: Uniform glossy black with a greenish tint.

Bill: Dull horn-brown, deep in shade along the culmen and becoming yellowish along the edges of the mandibles; the sides of both mandibles have the surfaces rough, a condition most apparent in breeding birds.

Feet: Legs and feet dark greenish black.

Iris: Dark blue in the breeding season. Green in immature birds (Pozzi).

Adult birds not breeding are similar in general appearance, but the white plumes are wanting, the white defining margin at the border of the pouch is not present, and the upper neck, the head and lower neck and breast are shaded strongly with snuff-brown dark in tone.

Immature birds and young of the year are much browner beneath and the distinct admixture of buffy feathers is marked, beginning on the head and extending down the neck well below the breast. The upper parts are similar to those of adults, but the ash is lighter in tone. This description is based on five birds in the Pozzi Collection, Princeton University Museum, taken at Ensenada, Province of Buenos Aires in May, 1895.

Geographical Range.—Atlantic and Pacific Coasts of South America; north to the coasts of Central America; there is a bird in the Dresser Collection, British Museum, labeled Fort Stockton, Texas; Patagonian Coasts and inland waters.

This cormorant does not appear to be very common on the southern sea-coasts, nor in the interior of South Patagonia, but is abundant in both the interior and on the coast to the north; there are records of its occurrence at many points in Patagonia proper as well as in the regions about that country, but it was not recorded or collected by the Princeton Expeditions, nor are there any specimens in the large series of birds in the British Museum from the Straits of Magellan or the adjacent littoral.

Dr. Coppinger furnishes the following biography of this bird as observed by him in the Straits; evidently the "jet black bird" called by him *Phalacrocorax imperialis* refers to this species, *P. vigua*, the only wholly black cormorant of the region.

"There was a 'rookery' of the red-cered cormorant (*Phalacrocorax magellanicus*) near Cockle Cove (October, 1879), but the nests were

placed on almost inaccessible ledges in the face of the rocky cliff, which was streaked all over with vertical white lines from the droppings of the birds. This species of cormorant is very abundant throughout all the channels. A second species, a jet black bird (*Phalacrocorax imperialis*), builds its nest in trees; and there was a characteristic 'rookery' of this tree cormorant at Port Bermejo, where we anchored in the month of November. It was a quiet, sequestered place, where two old and leafless beech trees overhung the margin of an inland pond. The nests were constructed of dried grass, and were placed among the terminal branches of the trees. These funereal-looking birds, sitting on or perching by their scraggy nests on the bare superannuated trees, formed a truly dismal spectacle. They uttered, too, a peculiar cawing sound, which was not cheerful, and so remarkably like the grunting of a pig, that before I saw the rookery I was for some time peeping through the bushes and looking for tracks, imagining myself in the neighbourhood of some new pachydermatous animal. It seemed as if the birds took the grunting business by turns, only one at a time giving tongue.

"I was surprised to see how neatly they alighted on the branches. There was none of the awkward shuffling motion of wings and feet which they exhibit when alighting on the ground or on the water; but, on the contrary, each fresh arrival soared on to its perching place as smoothly and cleverly as a hawk, and grasped the branch firmly with its claws. At another tree rookery in Swallow Bay I noticed that when some of the birds on flying in observed my presence, they would rise high above the tree, and remain soaring around in circles till I had gone away. The method of soaring was to all appearance as smooth, steady, and devoid of effort as that of a vulture. And yet the cormorant is a heavy short-winged bird, that rises from the ground with difficulty, and whose ordinary method of flight is most laborious." (Cruise, "Alert," 1883, pp. 106-107.)

PHALACROCORAX MAGELLANICUS (Gmelin).

Magellanic Shag, Lath. Gen. Syn. iii. pt. 2, p. 604 (1785: Tierra del Fuego).

Pelecanus magellanicus, Gm. Syst. Nat. I. p. 576 (1788) ex Lath.; Forst.

Descr. Anim. p. 356 (1844: Tierra del Fuego: Staten Isl.)

Hydrocorax magellanicus, Vieill. N. Dict. d'Hist. Nat. viii. p. 87 (1817).

Hydrocorax leucogaster, Vieill. tom cit. p. 90.

Phalacrocorax magellanicus, Stephens in Shaw's Gen. Zool. xiii. p. 89 (1825); Gray, List B. part iii. p. 186 (1844: Str. Magellan: Falkland Islands); Jacq. & Puch. Voy. Pole Sud. iii. p. 128 (1853); Scl. P. Z. S. 1860, p. 391 (Falkland Islands); Abbott, Ibis, 1861, p. 167 (loc. cit.); Scl. & Salv. Ibis, 1870, p. 499 (Port Churruca); Cunn. Nat. Hist. Str. Magell. p. 478 (1871); Scl. & Salv. Nomencl. Av. Neotr. p. 124 (1873: Chili: Str. Magellan: Falkland Isl.); Sharpe, P. Z. S. 1881, p. 11 (Trinidad Channel); Vincig. Exp. Austr. Arg. p. 58 (1883); id. Patag. p. 59 (1882); Coppinger, Cruise Alert, p. 106 (1883: Cockle Cove); Oust. Miss. Scient. Cap Horn, Ois. p. 150 (1891); Grant, Cat. B. Brit. Mus. xxvi. p. 388 (1898); Schalow, Zool. Jahrb. Suppl. IV. p. 681, Taf. xxxviii (1898: Valparaiso; Lagartiza Island; Calbuco, Dec.); Sharpe, Hand-list B. I. p. 234 (1899); Albert, Contr. Estud. Aves. Chil. II. p. 352 (1899); Martens, Vög. Handb. Magalh. Sammelr. p. 22 (1900); Salvad. Ann. Mus. Genov. (2) xx. p. 628 (1900): Penguin Rookery: Porto Cook).

Phalacrocorax sarmientonus, King, P. Z. S. 1831, p. 30 (Straits of Magellan).

Phalacrocorax erythrops, King, tom cit. p. 30 (Straits of Magellan).

Carbo leucotis, Less. Traité d'Orn. p. 604 (1831: Falkland Isl.)

Graculus magellanicus, Gray, Gen. B. III. p. 667 (1845): Desmurs in Hist. Chil. Zool. I. p. 492 (1847: Tierra del Fuego): Schl. Mus. Pays Bas VI. Pelec. p. 21 (1863: part); Pelz. Reis. Novara Vög. p. 159 (1865: Chiloe); Gray, Handl. B. II. p. 128, no. 11136 (1871: Straits of Magellan: Falkland Isl.).

Graculus sarmientonus, Gray, Gen. B. III. p. 668 (1845); Desmurs in Gray Hist. Chil. Zool. I. p. 490 (1847: Straits of Magellan).

Cormoran magellanique, Hombr. & Jacq. Voy. Pole Sud. Atlas, Ois. pl. 31^{bis}. (1842-53).

Urile magellanicus, Bonap. Consp. Av. II. p. 177 (1855); Ridgw. Proc. U. S. Nat. Mus. xii. p. 139 (1889: San Martin Isl.).

Hypoleucus magellanicus, Bonap. C. R. xlii. p. 775 (1855).

Phalacrocorax mentalis, Temm. Teste Bonap. Consp. Av. II. p. 175, (1855).

Carbo magellanicus, Cass. U. S. Expl. Exped. Birds, p. 370 (1858: Orange Harbour, Tierra del Fuego).

Haliæus penicillatus (nec Brandt) Burm. An. Mus. Nac. Buenos Aires, III. part X. p. 249 (1888: Santa Cruz, S. Patagonia).

GENERAL DESCRIPTION:

Size.—Adult male.

Total length, 26.00 inches.

Wing, 10.5 inches.

Culmen, 2.0 inches.

Tail, 5.5 inches.

Tarsus, 2.1 inches.

The adult female is somewhat smaller than the male, but similar in color.

Color.—Adults in breeding plumage.

General color: Black or dark shining green above; from the chest backward, white below.

Head: Black with steel-blue gloss; there is a small white spot on the ear-coverts; long, white, filamentous feathers are scattered irregularly over the ground color of the head. There is a crest of feathers on the forehead, fan-shaped from the front view.

Neck: Black with deep steel-blue gloss, and with the same sparse white feathers appearing.

Back: Interscapular region dull glossy sage green, each feather indistinctly margined with a darker shade of the same color, giving a scaled appearance to the whole; lower back, rump and upper tail-coverts black, with a strong gloss of deep steel-blue. There is here as on the head and neck an admixture of long, narrow, white feathers.

Tail: Black, shaded with dull brownish. Twelve feathers.

Wings: Scapulars and wing-coverts, exposed surfaces of the secondaries and tertials, dull sage-green, with an indistinct shading of a darker tone, making an undefined margin to each feather. Primaries blackish with a dull brown shading.

Lower parts: Flanks, thighs and under tail-coverts, as well as the throat, black with a strong gloss of deep steel-blue; the rest of the under parts pure shining white. In all the dark parts there is a scattered admixture of long, narrow white feathers.

Bill: Deep yellow; the carunculations and eyelids shading into blood red.

Feet: Yellow shaded with brownish.

Iris: Dull reddish brown. In the non-breeding season brown of varying shade; in young birds grey.

Adult birds in the non-breeding plumage lack the black throat, the entire neck beneath being white. The colors of the carunculations are duller in tone, often yellowish; the crest is not present; the long white feathers or plumes of the breeding period, at which time they decorate the darker portions of the plumage, are absent. In the large series of birds of this sort in the British Museum, there appears every stage of transition between the two phases of plumage of the adult birds.

Immature birds seem like non-breeding adults but have the dark parts duller and the white below more restricted; especially on the throat, where this color is often only a broad median line.

The following descriptions of the soft parts have been published:

"Female: Trinidad Channel, February 27, 1879. Iris reddish brown; lids and wattled skin of a blood-red colour; legs grey in front, dusky black behind." (Sharpe, P. Z. S. 1881, p. 11.)

"Iris red; bare skin of face red.

"One of the adults had a white spot on the ear-coverts and on the upper throat, being in transition from summer to winter plumage. The immature female had the abdomen thickly marked with very dark brown.

"This species is particularly common in the Straits of Magellan. The breeding-season was over when we were there. During the first week in February I saw numbers in all the anchorages visited, feeding amongst the seaweed." (M. J. Nicoll, Orn. Jour. Voy. round World, Ibis, Jan. 1904, p. 48.)

Geographical Range.—Southern Coasts of Chili and Patagonia; the Straits of Magellan and Fuegian waters; the Falkland Islands.

This is one of the commoner cormorants in the Straits of Magellan where they appear to be resident; they are salt-water birds, seldom of occurrence in the interior or even away from the coast and were not recorded on any of the salt lakes inland by Mr. Hatcher and his associates. There are records of the birds as far north as Valparaiso on the Pacific Coast and on the Atlantic shore near the mouth of the Rio Santa Cruz of Patagonia.

Some idea of the life of the birds is gained from the following vivid sketch: Dr. Coppinger speaks of the birds in connection with *P. vigua* and says:

"One day, when we were lying at our old anchorage in Tom Bay, I saw a cormorant rise to the surface with a large fish in its mouth, which,

for several minutes, it vainly attempted to swallow. I noticed it chucking the fish about until it had got hold of it by the head, but even then it seemed unable to 'strike down' the savoury morsel. A flock of dominican gulls now appeared on the scene, and seeing the state of affairs at once swooped down on the unlucky cormorant, but the wily bird discomfited them by diving and carrying the fish with it. It was now most ludicrous to witness the disappointed appearance of the gulls, as they sat in a group on the water looking foolishly about, and apparently overcome with grief at their inability to follow up the chase by diving. After an interval of about half-a-minute the cormorant reappeared some distance off with the fish still in its mouth, and now one of the gulls succeeded at last in snatching the fish from its grasp, and flew away with it rapidly up a long winding arm of the sea. At this critical moment a skua (*Stercorarius chilensis*), hove in sight, and gave chase to the fugitive gull, until, unfortunately, a turn in the creek concealed both birds from our sight, but left us to safely conjecture that the last comer had ultimately the satisfaction of consuming the wretched fish.

"I have often wondered at the apparently stupid manner in which long files of cormorants will continue on their course over the surface of the water without deviating so as to avoid a dangerous locality until they are close to the place or object to be avoided. Many persons are doubtless familiar with the appearance of these birds as they fly towards a boat which happens to lie in their route, and may remember the startled way in which, when about twenty or thirty yards off, they will alter their course with a vigorous swish of the tail and sheer off confusedly from the danger. Again, how eager they are to take advantage of the (probably) acuter vision of terns and gulls, when they observe that either of the latter have discovered a shoal of fish. Is it not therefore probable that cormorants are naturally short-sighted?—a disadvantage for which they are amply compensated by their superior diving powers." (Cruise, "Alert," 1893, pp. 110–111.)

PHALACROCORAX ATRICEPS King.

Phalacrocorax carunculatus, Stephens (nec Gm.) in Shaw's Gen. Zool. xiii. p. 94 (1825: Staten Island); Gould Voy. Beagle, Birds, p. 145 (1841: Port St. Julian, Patagonia); Pelz. Reis, Novara, Vög. p. 159 (1865: Chiloe); Scl. & Salv. Ibis, 1869, p. 284 (Straits of Magdalena); iid. Ibis, 1870, pp. 499, 500 (Mayne Harbour: Port Churruca);

- Newton, t. c. p. 504 (Str. Magdalena, eggs); Cunnh. Nat. Hist. Str. Magell. pp. 191, 271, 275 cum tab (1871); Scl. & Salv. Nomencl. Av. Neotr. p. 124 (1873: Chili: Str. Magellan); Vincig. Patag. p. 26 (1883); id. Boll. Soc. Geogr. Ital. (2) IX. p. 799 (1884); Oust. Miss. Sci. Cap Horn, Oiseaux, p. 144, pl. vi. back fig. part (1891).
- Phalacrocorax atriceps*, King, Zool. Journ. IV. p. 102 (1829; Straits of Magellan); Grant, Cat. B. Brit. Mus. xxvi. p. 390 (1898); Sharpe, Hand-list B. I. p. 234 (1899); Martens, Hamb. Magalh. Sammlr. Vög. p. 22 (1900); Salvad. Ann. Mus. Genov. (2) xx. p. 627 (1900: Isla de Leones, Santa Cruz).
- Phalacrocorax imperialis*, King, P. Z. S. 1831, p. 30 (Straits of Magellan); Scl. & Salv. P. Z. S. 1878, p. 652 (Cove Harbor, Messier Channel); üd. Voy. Chall. Birds, p. 120, pl. xxv. fig. 1 (1880); Forbes, Ibis, 1893, pp. 534-537, 541.
- Phalacrocorax cirrhatus*, Gray, List B. part III. p. 186 part (1844); Scl. & Salv. Ibis, 1868, p. 189 (Straits of Magellan); Schalow, Zool. Jahrb. Suppl. IV. p. 683.
- Graculus cirrhatus*, Gray, Gen. B. III. p. 667 (1845); Des Murs in Gay Hist. Chil. Zool. II. p. 490 (1847).
- Hypoleucus cirrhatus*, Bonap. Consp. Av. II. p. 174 (1855: Chili).
- Urile carunculatus*, Bonap. t. c. p. 176 (Straits of Magellan).
- Graculus elegans*, Philippi, Wieg. Archiv. xxiv. p. 305 (1858: Chili).
- Graculus carunculatus*, Schl. (nec Gm.) Mus. Pays. Bas vi. Pelec. p. 20, part (1863: Straits of Magellan); Gray, Handl. B. III. p. 128, no. 11,137 part (1871: Staten Isl.)
- Halicæus atriceps*, Burm. Ann. Mus. Nac. Buenos Aires, III. part X. p. 249 (1888: Straits of Magellan).

GENERAL DESCRIPTION.

Size.—Adult male.

Total length, about 29.00 inches.

Wing, 11.0 inches.

Culmen, 2.3 inches.

Tail, 5.5 inches.

Tarsus, 2.7 inches.

The adult female is a little smaller than the male but is identical in color.

Color.—Adult male.

General color: Above glossy black, with green or blue tinge; below white; a white dorsal patch is generally present and an alar bar of white or whitish on each wing, is constant.

FIG. 253.

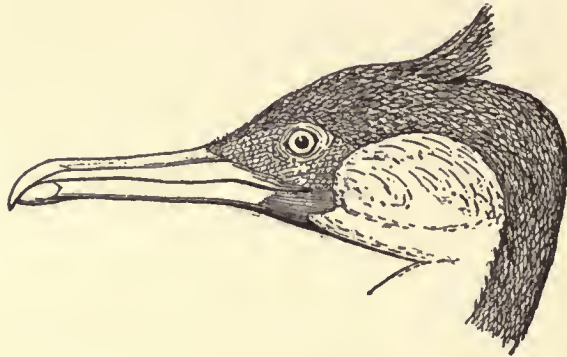


FIG. 254.



Phalacrocorax atriceps. P. U. O. C. 7912. Female. Profile of head. Bill and head from above. Reduced.

Head: Above black, with steel-blue gloss; there is an admixture of hair-like white feathers in the black of the sides of the head; the white of the neck invades the region of the side of the head so as to reach above and forward of the ears, which are therefore in the center of the white area; there is a well developed crest of black, shining feathers, which has a tendency to recurve forward.

Neck: Above glossy steel-blue black; this color does not reach down on the sides of the neck; below pure white with a silky sheen.

Back: Upper back and interscapular region dull bottle-green with a strong gloss and with no markings or shadings on the feathers, which present uniform color throughout; lower back, rump and upper tail-coverts uniform steel-blue black, very finely glossed and broken in most individuals by a white dorsal patch of varying shape and extent.

Tail: Blackish, with a decided dull green tint shading the feathers. There are twelve rectrices.

Wings: Dull, glossy bottle-green; the primaries brownish black; the

secondaries and tertials on their exposed surface uniform dull, glossy bottle-green; an alar bar of pure white extending from the base of the forearm well toward the wrist; this varies from three to four inches in length and is half to three quarters of an inch wide; under wing-coverts and axillaries dull blackish, with more or less glossing of green.

Lower parts: The flanks, thighs and under tail-coverts black, with a steel-blue gloss; the rest of the under parts pure white with a fine silky sheen.

Bill: Yellow, with strong shading of horn brown; the nasal caruncles, which are not prominent, yellowish green shading into bright blue on the naked skin about the eye.

Iris: Bright green in the breeding season; yellow grey to hazel brown at other times.

Feet: "Tarsi scarlet" (Darwin).

An immature female so far as plumage goes, but probably a bird which had passed one breeding season, is among the birds collected by Mr. Hatcher. It is catalogued 7912 in the University Museum and was taken on the coast near Mount Tigre, Southern Patagonia, August 18th, 1896. I am unable to refer this to young birds of the year. It has the upper parts ashy brown, the tips of many feathers being whitish, there is a decided and well grown crest, the white region on the head extends well forward, nearly to the eye, and passes above, wholly surrounding the ear; the alar bars are present but not well defined; there is no dorsal white patch; the under parts are pure white, as in adults, save that the thighs and under tail-coverts are black or brownish black; there are no carunculations about the face and the feathers reach unbroken to the upper point of the culmen and even the usual bare skin in front of the eyes is slightly feathered; the dry bill looks as if it had been dull brown in life, but the feet must have been, from their appearance, bright yellow.

Presumably immature birds are like the closely allied young of *Phalacrocorax albiventer*.

M. J. Nicoll (Ibis, Jan., 1904, p. 48), describes the colors of the eyes, etc., as follows: "Iris green; eyelids blue; face and nasal caruncles yellowish green.

Geographical Range.—South Patagonia on the Atlantic coast at least as far north as the mouth of the Rio Santa Cruz; the Straits of Magellan and Fuegian waters; South Georgia? Pacific Coast of South America as far north as Chiloe Island.

This cormorant appears to be common on the coast of Patagonia as far north as the mouth of the Santa Cruz River, in which vicinity the birds were found by Mr. Hatcher and his assistants. They met with the birds in the non-breeding period and were fortunate to preserve specimens at that season.

It appears that the bird called *Phalacrocorax carunculatus* by Dr. Cunningham (Nat. Hist. Strts. Magell., 1871, p. 271) was this bird, and his admirable description of its breeding on Santa Magdalena Island, not far from Elizabeth Island, in the Straits, is here appended.

"The most remarkable spectacle, however, was still to come. Pursuing our way over the island, we ere long reached some large hollows, which cormorants (*Phalacrocorax carunculatus*) had adopted as breeding-places. The birds were there congregated in their nests literally in thousands, forming a dense black mass covering a space of many yards; and, on being disturbed, rose into the air in a cloud, winnowing it with their wings so as to produce a sound resembling that of a strong breeze blowing, and almost concealing the heavens from view; while a number of skua gulls, associated with them, gave vent to a tumult of discordant cries. Their nests were regularly shaped flattened mounds, slightly excavated on the upper surface, and ranged in almost mathematical series, exactly a foot of space intervening between each nest. They were formed of dried grass and other herbage baked into a solid mass with earth and guano; and the generality contained from one to three greenish-white eggs about the size of that of a domestic fowl, and with a rough chalky surface." (Nat. Hist. Str. Magell. 1871, pp. 271-272.)

M. J. Nicoll says: "This fine cormorant is the most abundant of the genus in Magellan Straits and Smythe's Channel. I saw numbers at every anchorage. As a rule, the birds fly together in flocks." (Ibis, Jan., 1904, p. 48.)

PHALACROCORAX ALBIVENTER (Lesson).

Carbo albiventer, Less. Traité d'Orn. p. 604 (1831: Falkland Islands); Puch. Rev. et. Mag. de Zool. 150, p. 627.

Phalacrocorax cirrhatus, Gray (nec Gm.) List B. Brit. Mus. part iii. p. 186 pt. (1844: Falkland Isl.: Port St. Julian, Patagonia).

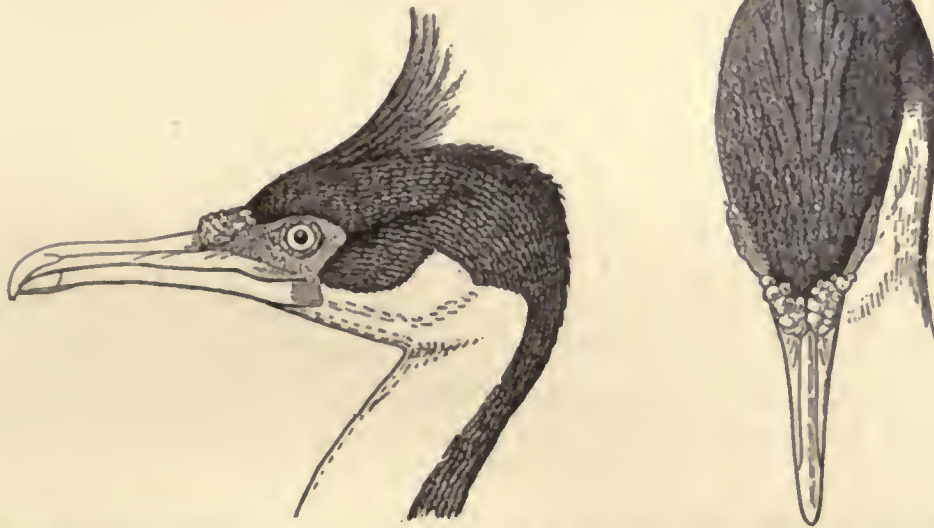
Graculus cirrhatus, Gray (nec Gm.), Voy. Erebus & Terror, B. p. 19 (1845).

Graculus albiventer, Des Murs in Gay's Hist. Chil. Zool. I. p. 491 (1847).

- Urile purpurascens*, Bonap. Consp. Av. II. p. 117 (1855: Falkland Isl.).
Hypoleucus purpurascens Bonap. C. R. XLII. p. 775 (1855).
Phalacrocorax carunculatus, Scl. (nec Gm.) P. Z. S. 1860, p. 391 (Falkland Islands); Abbott, Ibis, 1861, p. 166 (Falkl. Isl.); Oust. Miss. Scient. Cap Horn, Oiseaux, p. 144 (pt.) pl. vi. front figure (1891).
Phalacrocorax albiventris, Scl., P. Z. S. 1879, p. 310 (Falkland Isl., eggs); id. & Salv. Voy. Chall. Birds, pp. 121, 157, pl. xxv. fig. 2 (1880); Forbes, Ibis, 1893, pp. 535, 540.
Phalacrocorax imperialis, Sharpe (nec King), P. Z. S. 1881, p. 11 (Tom Bay, Magellan).
Haliaeetus verrucosus, Burm. (nec Cab.), An. Mus. Nac. Buenos Aires, III. part X. p. 249 (1888: Patagonia).
Urile albiventer, Ridgw. Proc. U. S. Nat. Mus. xii. p. 139 (1889: San Martin Isl.)

FIG. 255.

FIG. 256.



Phalacrocorax albiventer, P. U. O. C. 7911. Profile of head. Head and bill from above. Reduced.

- Phalacrocorax albiventer*, Grant, Cat. B. Brit. Mus. xxvi. p. 392 (1898); Sharpe, Hand-list B. I. p. 324 (1899); Martens, Hamb. Magalh. Sammelr. Vög. p. 22 (1900: Falkland Islands), Salvad. Ann. Mus. Genov. (2) xx. p. 627 (1900: Penguin Rookery: Porto Cook).
Falacrocorax carunculatus, Carbajal (nec Gm.), La Patagonia, Part II. p. 277 (1900).

GENERAL DESCRIPTION:

Size.—Adult female, 7911 P. U. O. C., near Coy Inlet, Patagonia, 14th September, 1896. J. B. Hatcher.

Total length, about 28.00 inches.

Wing, 11.0 inches.

Culmen, 2.3 inches.

Tail, 5.5 inches.

Tarsus, 2.6 inches.

Adult birds do not seem to vary in size or plumage, the sexes being identical in appearance.

Color.—(Adult female cited above).

General color: Above glossy black, with bottle-green on wings; a white alar bar and the lower parts pure silky white with a fine sheen.

Head: Black above, with a pronounced recurved crest, the longest feathers one and three quarters inches, the whole glossed with steel-blue, often shaded with dull purple and steel-green; the black extends well down on the sides of the face below the eyes and covers the ears; a slight admixture of hair-like white feathers on the sides of the head about the ears and behind the eye.

Neck: Black, glossed with steel-blue deep in tone above, and pure white with a silky sheen below; the white extends to the base of the lower mandible and there is a pointed inter-ramal white feathering extending forward almost in line with the commissure of the bill.

Back: Upper back and interscapular region, dull bottle-green, with a strong gloss, but with no marks or shading on the feathers; lower back, rump and upper tail-coverts black, with a fine steel-blue sheen and gloss; there is in none of the specimens examined any trace of a white dorsal patch.

Tail: Dull brownish black; the shafts of the rectrices white for a third of their length; there are twelve rectrices.

Wings: Dull, glossy bottle-green; the primaries brownish black; secondaries and tertials on their exposed surfaces dull, glossy bottle-green; upper wing-coverts dull bottle-green, interrupted generally by a more or less perfect alar bar of pure white (some apparently adult individuals examined lack this alar bar); under wing-coverts and axillaries dull blackish brown, somewhat glossed with green.

Lower parts: Thighs and under tail-coverts glossy black, with steel-blue shading; the rest of the underparts pure white, with a silky sheen.

Bill: Horn-brown, with yellow and reddish shading; nasal caruncles markedly developed and reaching back to a line just in front of the eyes; deep cadmium in color, shading into French blue on the bare skin about the eye.

Iris: Green in the breeding season; at other times yellowish brown.

FIG. 257.



Detail of foot. *Phalacrocorax albiventer*. P. U. O. C. 7911. Reduced.

Feet: Cadmium yellow.

FIG. 258.

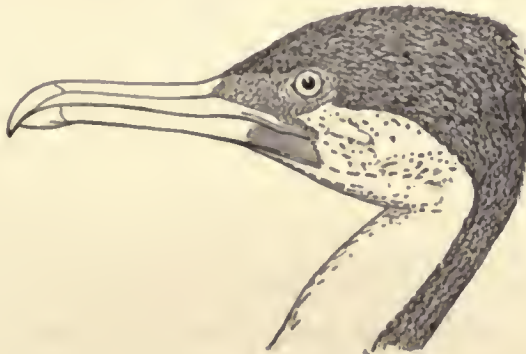


FIG. 259.



P. albiventer. P. U. O. C. 8312. Immature male. Profile of head. Head and bill from above. Reduced.

Immature birds (8312 P. U. O. C., Cape Fairweather, Patagonia, 12 February, and 8313 the same day and place) are ashy brown above, with lighter tips to the feathers, especially on the wings and back; the alar bar shows an indistinct dirty white area along the forearm; the color, ashy brown, of the sides of the head and face extends well down to below the commissure of the bill, making the white area on the throat narrow, com-

pared with *atriceps* in the same plumage; there are no nasal carunculations and the feathers reach to the base of the culmen; the lower parts are pure white, not as silky as in breeding birds; the thighs and under tail-coverts ashy brown.

A young bird, half grown, (8314 P. U. O. C., Cape Fairweather, 12 February, 1898) is still in the down stage of plumage, so far as the head and neck are concerned; these are covered with a thick fur-like down, snuff-brown

FIG. 260.

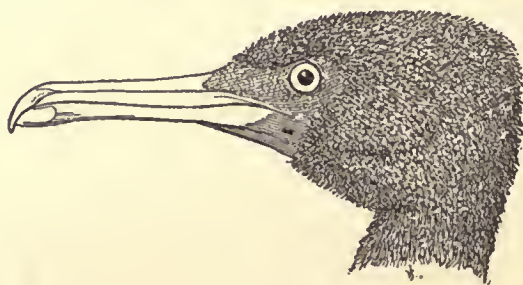


FIG. 261.



Phalacrocorax albiventer. P. U. O. C. 8314. Half grown bird in downy plumage. Profile of head and bill. Head and bill from above. Reduced.

in color; the rest of the body shows more or less down of the same shade and character; the wing-coverts, secondaries and tertials are well grown, as are the scapulars, all ashy brown, with a distinct shading or gloss of dull green; the alar wing-bar shows indistinctly; the tail is well grown, four inches long, but the primaries are short and concealed by the secondaries, which overhang them for at least two inches; the down of the back is mixed with ashy brown feathers and the down of the under parts is almost overgrown by the pure white feathers taking its place. Bill horn-brown; feet yellowish brown.

Geographical Range.—Coast of southern South America. As far north as Port San Julian on the Patagonian coast. The Straits of Magellan and Fuegian waters. The Falkland Islands.

The series of these cormorants procured at Cape Fairweather and other

coast points in Patagonia by Mr. Hatcher and his assistants seems to indicate a purely salt-water form, the birds not being recorded at any point away from the sea. The breeding season begins in late October and is probably at its height early in November and the birds are still found in the down, about two-thirds grown, in the middle of February.

The cormorant rookery spoken of by Dr. Cunningham in the following extract, was on Quartermaster Island, Tierra del Fuego, and it seems to have been this kind of bird (*P. albiventer*) which he discovered there; this was on the 6th of April and the rookery was not a breeding but only a roosting or resting place.

"After a time we reached a plateau at the top of some cliffs, and there beheld a most wonderful congregation of cormorants (*Phalacrocorax carunculatus*). On a moderate computation they must have numbered upwards of a thousand, and they presented a most peculiar appearance as they sat nearly erect, in regular ranks. As we ran up to them, it was most amusing to watch the difficulty which they experienced in taking flight, in consequence of being so closely packed together. Line after line hustled forwards for some paces, and then breaking up, flew over the cliffs into the sea below, where they swam out to a prudent distance. One or two, which had been hit with stones, lay on their backs on the beach for some minutes, emitting strange sounds, and waving about their splay feet in the air, in the most ridiculous manner, till they were sufficiently recovered to take to the water. The space of ground on which they had been assembled was worn perfectly bare of grass for several hundred yards, and the smell of decaying fish, the viscera of which were lying about in innumerable little heaps, was insupportable." (Cunn. Nat. Hist. Str. Magell. 1871, p. 191.)

Order CATHARTIDIFORMES.

Sharpe, Classif. Bds. p. 78 (1891); Sharpe, Hand-List Bds. i. p. 240 (1899).

Family CATHARTIDÆ.

Sharpe, t. c. p. 240 (1899).

Genus VULTUR.

<i>Vultur</i> Linnaeus, Syst. Nat. Ed. X. p. 86, (1758)	Type.
<i>Sarcoramphus</i> , Sharpe, Cat. Bds. Brit. Mus. i. p. 20 (1874);	<i>V. gryphus</i> .
Sharpe, Hand-list Bds. i. p. 240 (1899) (nec Duméril).	

Gryphus, Bonap. Rev. et Mag. de Zool. 1854, p. 530 . . . *V. gryphus*.

Geographical Range.—South America; on the western coast from Ecuador and Colombia southward to the Straits of Magellan, and on the east coast north to about latitude 41° south.

VULTUR GRYPHUS Linnæus.

Vultur gryphus, Linn. Syst. Nat. i. p. 86 (1758).

Le Condor, Briss. Orn. I. p. 473 (1760).

Vultur magellicanus, Shaw, Mus. Lever. p. 1, pl. 1 (1792).

Iriburubichá, Azara, Apunt. I. p. 15 (1802).

Gypagus gryffus, Vieill. N. Dict. d'Hist. Nat. xxxvi, p. 450 (1819).

Cathartes gryphus, Tenam. Pl. Col. I. pls. 133, 408, 494 (1823); Schl. Mus. Pas Bas, Vultures, p. 1 (1862).

Sarcoramphus condor, Less. Traité d'Orn. p. 25 (1831); Des Murs in Gay's Hist. Chil. Zool. I. p. 194, pl. i (1847); Phil. & Landb. Cat. Av. Chil. p. 2 (1868).

Sarcoramphus gryphus, D'Orb. Voy. Amer. Mérid. p. 17 (1835); Fraser, P. Z. S. 1843, p. 108 (Chilian Andes, abundant); Pelz. Reise Novara, Vög. p. 3 (1865: Chili).

Sarcoramphus gryphus, Darw. Voy. Beagle, Birds, p. 1 (1841: Rio Negro [Lat. 41°]: Port Desire; Santa Cruz); Bibra, Denkschr. Ak. Wien (2) V. p. 128 (1853); Hartl. Naum. 1853, p. 220 (Chili); Cass. U. S. Astr. Exped. p. 172 (1855); id. U. S. Expl. Exped. Aves, p. 69 (1858: Valparaíso, April: Callao, May); Burm. La Plata Reis. II. p. 433 (1861: Sierras of Cordova); Scl. & Salv. Nomencl. Av. Neotr. p. 123 (1873: Patagonia); Sharpe, Cat. B. Brit. Mus. I. p. 20 (1874); Durnf. Ibis, 1877, pp. 29, 40 (Ninfas Point, Chupat Valley, Nov.); id. Ibis, 1878, p. 398 (Valley of the Sengel, Nov. breeding); Vincig. Boll. Soc. Geogr. Ital. (2) IX. p. 797 (1884); Phil. Ornith. IV. p. 220 (1886: Trespuntas); Burm. An. Mus. Nac. Buenos Aires, III. part X. p. 241 (1888: Patagonia from the Atlantic to the Cordilleras); Scl. & Huds. Argent. Orn. II. p. 90 (1889: Rio Negro); Oust. Miss. Scient. Cap Horn, Oiseaux, pp. 248, 324 (1891: Santa Cruz; Orange Bay: Rio Gallegos); James, New List Chil. B. p. 9 (1892); p. 115 (Córdoba); Frenzel, J. f. O. 1891, Lane Ibis, 1897, p. 184 (Tarapacá); Schalow, Zool. Jahrb. Suppl. IV. p. 690 (1898: Punta Teatina, Dec.); Gosse in Fitzgerald's

Highest Andes, App. C. p. 342 (1899: Mendoza; Punta de las Vacas; Lujan, winter); Sharpe, Hand-list B. i. p. 240 (1899); Carbajal, La Patagonia, Part II, p. 259 (1900); Martens, Hamb. Magalh. Sammelr. p. 5 (1900: South Patagonia).

Sarcorhamphus papa, Hartl. (nec Linn.) Ind. Azara, p. 1 (1847); Cunningh. Nat. Hist. Hartl. Str. Magell. pp. 114, 303 (1871).

Gryphus cunctur, Bonap. Rev. et Mag. de Zool. 1854, p. 530.

Sarcorhamphus magellanicus, Sharpe, Cat. B. Brit. Mus. i. p. 20, note (1874); Gurney, Ibis, 1875, p. 91: id. List. Diurn. B. Prey, p. 2 (1884).

FIG. 262.



Vultur gryphus. Adult male. Drawn from a live bird in the collection at Central Park, New York. About one-eighth natural size.

GENERAL DESCRIPTION:

Size.—Adult male, P. U. O. C. 6707. Cape Fairweather, Patagonia; 11 July, 1896; J. B. Hatcher.
Total length, about 39.00 inches.

Wing, 29.00 inches.

Culmen, 2.8 inches.

Tail, 14.5 inches.

Tarsus, 4.7 inches.

FIG. 263.



Vultur gryphus. Adult male. In repose. Drawn from a live bird in the collection at Central Park, New York. About two-thirds natural size.

Color.—(Male cited above.)

General color: Glossy black, with much silvery frosted white on the wings and a pure white ruff about the neck.

FIG. 264.



Vultur gryphus. Adult male. Alert. Drawn from a live bird in the collection at Central Park, New York. About two thirds natural size.

Head: No feathering; the bare head is decorated with a wattle and there is a large caruncle extending from the latter part of the culmen to the back of the head. The wattles vary much in color and appearance, when the bird is in repose or when very active; lavender to bluish pink are the prevailing shades when the bird is quiet; these colors are intensified and the pink and red shades become vivid when the bird is excited.

Neck: The bare skin of the neck is crinkled and terminates abruptly in the snow-white, downy ruff around the lower neck. There is a pendant wattle immediately below this ruff, at the base of the neck where it joins the chest.

Back: Glossy dead black throughout, including rump and upper tail-coverts.

Tail: Glossy dead black.

Wings: Scapulars and lesser wing-coverts like the back; outer primaries glossy black; inner primaries and all the secondaries margined deeply on all the exposed upper surfaces with ash-white, having a frosted appearance; the tips of the secondaries are glossy black, forming a terminal bar of that color, when the wing is closed; the wing as a whole has the shoulders black and the rest of the wing ash-white, when closed; when expanded, it is black, white and black; under wing-coverts and axillaries shining deep black.

Lower parts: Glossy dead black.

Bill: "Brownish at the base, shading into clear white at terminal half and tip." (J. B. Hatcher.)

FIG. 265.



Vultur gryphus. Foot and leg; one-half natural size. P. U. O. C. 7983.

Feet: "Black, powdered with grey." (J. B. Hatcher.)

Iris: "51. ♀?; Rio Gallegos, 3 June, 1896, grey; fine plumage. 72. ♀. Cape Fairweather, 6 July, 1896, eye fiery red. 85. ♂. Cape Fairweather, 16 July, 1896, eye between brown and orange (pupil black). 86. ♂. Same as last or probably a shade lighter. 105. ♂. Eye orange color." The above colors for the iris are taken from Mr. Hatcher's field note book.

FIG. 266.



Vultur gryphus. Adult female. P. U. O. C. 7983. About two-thirds natural size.

The adult female is like the adult male in body color, but lacks the wattles and caruncle of that sex and is generally a little smaller. The bare skin of the head and neck is covered with sparse brownish down and the sides of the face have a scattered cover of black hairs.

Immature males are like the females, except that the ash-white of the wings is not attained until the second or possibly the third year; they have at this period a nasal caruncle but no wattles, the head except for the caruncle being like that of the female.

FIG. 267.



Vultur gryphus. Immature male. Drawn from a live bird in the collection at Central Park, New York. About one-third natural size.

Young birds of the first year are dull brownish black all over and have the head much as in the adult female; the brownish shade is pronounced, there being no tinge of black, but sometimes the ash-white part of the wing

of the adult is indicated by a paler shade of brown. Primaries and tail feathers dull brownish. In this plumage the neck is covered with a thick dark brown down and the head is not so bare as in the old birds; the ruff on the neck is deep lead color and is not so well defined as is the white ruff of later life.

FIG. 268.



Vultur gryphus. Immature female. P. U. O. C. 7984. About one-eighth natural size.

Geographical Range.—Andes and cliffs of the coasts of western South America north to Peru; the cliffs of the Straits of Magellan and the Atlantic Coast north to the mouth of the Rio Negro (Darwin). Not frequent in the interior of Patagonia away from broken, hilly or mountain country. (Hatcher.)

The fine series of these birds brought by Mr. Hatcher from Patagonia, together with live birds in the Zoölogical Gardens in London and New York have formed the basis of the foregoing descriptions. Appended are the accounts of some of the best observers as to the behavior and general life history of the Condor.

Darwin in the "Voyage of the Beagle" (pp. 3-6) says: "The Condor is known to have a wide range, being found on the west coast of South America, from the Straits of Magellan, throughout the range of the Cordillera, as far, according to M. D'Orbigny, as 8° north latitude. On the Patagonian shore, the steep cliff near the mouth of the Rio Negro, in latitude 41°, was the most northern point where I saw these birds, or heard of their existence; and they have wandered about four hundred miles from the great central line of their habitation in the Andes. Further south, among the bold precipices which form the head of Port Desire, they are not uncommon; yet only a few stragglers occasionally visit the sea coast. A line of cliff near the mouth of the Santa Cruz is frequented by these birds, and about eighty miles up the river, where the sides of the valley were formed by steep basaltic precipices, the Condor again appeared, although in the intermediate space not one had been seen. From these and similar facts, I believe the presence of the birds is chiefly determined by the occurrence of perpendicular cliffs. In Patagonia, the Condors, either by pairs or many together, both sleep and breed on the same overhanging ledges. In Chile, however, during the greater part of the year, they haunt the lower country, near the shores of the Pacific, and at night several roost in one tree; but in the early part of the summer they retire to the most inaccessible parts of the Cordillera, there to breed in peace.

"With respect to their propagation, I was told by the country people in Chile, that the Condor makes no sort of nest, but in the months of November and December, lays two white eggs on a shelf of bare rock. Certainly, on the Patagonian coast, I could not see any sort of nest among the cliffs, where the young ones were standing. I was told that young condors could not fly for a whole year, but this probably was a mistake, since M. D'Orbigny says they take to wing in about a month and a half after being hatched. On the fifth of March (corresponding to our September), I saw a young bird at Concepcion, which, though in size only a little inferior to a full-grown one, was completely covered by down, like that of a gosling, but of a blackish color. I can, however, scarcely believe that this bird could have used, for some months subsequently, its wings for flight. After the period when the young Condor can fly, apparently as well as the old birds, they yet remain (as I observed in Patagonia) both roosting at night on the same ledge, and hunting by day with their parents; but before the young bird has the ruff round the neck white, it

may often be seen hunting by itself. At the mouth of the Santa Cruz, during part of April and May, a pair of old birds might be seen every day, either perched on a certain ledge, or sailing about in company with a single young one, which latter, though full fledged, had not its white ruff.

"The Condors generally live by pairs; but among the basaltic cliffs of the plains, high up the river Santa Cruz, I found a spot where scores must usually haunt. They were not shy; and on coming suddenly to the brow of the precipice, it was a fine sight to see some twenty or thirty of these great birds start heavily from their resting place, and wheel away in majestic circles. From the large quantity of dung on the rocks, they must have long frequented this cliff; and probably they both roost and breed there. Having gorged themselves with carrion on the plains below, they retire to these favorite ledges to digest their food in quietness. From these facts, the Condor must, to a certain degree be considered, like the Gallinazo (*Cathartes atratus*), a gregarious bird. In this part of the country they live almost entirely on guanacoes, which have either died a natural death, or, as more commonly happens, have been killed by the pumas. I believe, from what I saw in Patagonia, that they do not, on ordinary occasions, extend their daily excursions to any great distance from their regular sleeping places.

"The Condors may often be seen at great height, soaring over a certain spot in the most graceful spires and circles. On some occasions I am sure they do this for their sport; but on others, the Chileno countryman tells you, that they are watching a dying animal, or the puma devouring its prey. If the Condors glide down, and then suddenly all rise together, the Chileno knows it is the puma, which, watching the carcass, has sprung out to drive away the robbers. Besides feeding on carrion, the Condors frequently attack young goats and lambs. Hence the shepherds train their dogs the moment the enemy passes over, to run out, and looking upwards, to bark violently. The Chilenos destroy and catch numbers; two methods are used; one is to place a carcass within an enclosure of sticks on a level piece of ground, and when the Condors have gorged themselves to gallop on horseback to the entrance, and thus enclose them; for when this bird has not space to run, it cannot give its body sufficient momentum to rise from the ground. The second method is to mark the trees in which, frequently to the number of five or six, they roost together, and then at night to climb up and noose them; they are

such heavy sleepers, as I have myself witnessed, that it is not a difficult task. At Valparaiso I have seen a living Condor sold for sixpence, but the common price is eight or ten shillings. One which I saw brought in for sale, had been lashed with a rope, and was much injured; but the moment the line was cut by which its bill was secured, it began, although surrounded by people, ravenously to tear a piece of carrion. In a garden at the same place, between twenty and thirty of these birds were kept alive; they were fed only once a week, yet they appeared to be in pretty good health. The Chileno countrymen assert, that the Condor will live and retain its powers between five and six weeks without eating; I cannot answer for the truth of this fact, but it is a cruel experiment, which very likely has been tried.

"When an animal is killed in this country, it is well known that the Condors, like other carrion vultures, gain the intelligence and congregate in a manner which often appears inexplicable. In most cases, it must not be overlooked, that the birds have discovered their prey, and have picked the skeleton clean, before the flesh is in the least degree tainted. Remembering the opinion of M. Audubon on the deficient smelling powers of such birds, I tried in the above mentioned garden, the following experiment. The Condors were tied, each by a rope, in a long row at the bottom of a wall. Having folded a piece of meat in white paper, I walked backwards and forwards, carrying it in my hand at the distance of about three yards from them; but no notice was taken of it. I then threw it on the ground within one yard of an old cock bird; he looked at it for a moment with attention, but then regarded it no more. With a stick I pushed it closer and closer, until at last he touched it with his beak; the paper was then instantly torn off with fury, and at the same moment every bird in the long row began struggling and flapping its wings. Under the same circumstances, it would have been quite impossible to have deceived a dog."

The following is from Mr. Hatcher's Narrative of the Expedition, pp. 61-65: "The country for some two or three miles to the northward of Cape Fairweather consists of rounded hills separated by shallow depressions, while a loose, warm, sandy soil takes the place of the shingle of the plains and supports a considerable growth of grass and calafate bushes. It is a favorite retreat for the guanaco and rhea, as well as many other mammals and birds."

"If I had lost my first guanacos, killed in Patagonia, I had at any rate gained at first hand some very useful knowledge concerning the habits of the carranchas, those scavengers of this part of the southern hemisphere; and since the carcasses were no longer of value as natural history specimens, I resolved to see what more of interest they would be the means of teaching me concerning the habits of these or other birds or mammals. Repairing to a thicket of calafate bushes that grew on the margin of the bed of shingle, where I could watch without attracting attention, I took a comfortable position in order to observe the drama which was being enacted on this bed of shingle, in the first act of which I had been one of the principal participants, though now reduced to the rank of a spectator. What an animated scene was transferred suddenly as if by magic to this spot, which under ordinary circumstances is quite destitute of either animal or vegetable life. Carranchas gathered about in great numbers, while several white and grey gulls also appeared upon the scene. Many a spirited contest was waged between the various aspirants for the more desirable portions. Suddenly there was on all sides a scurrying, as these birds literally tumbled over one another in their haste to get away, and looking up I saw a male condor come sailing down. His powerful wings were fully extended, giving a total expanse of not less than nine feet. The long primaries were motionless, seemed separated from one another by an interval of about an inch, and were so distinct that I could without difficulty have counted the series as he soared by. The pure white of his shoulders and the delicate ruff was intensified by the deep black of the back and under-body, while the iridescence of the neck and comb were faintly distinguishable. He sailed straight as an arrow to the nearest carcass of the two guanacos, and on reaching a point directly over and a few feet above the dead animal, the limbs were dropped suddenly downward to their full length, there was a slight quivering motion, better described perhaps as tremor of the wings, and the great bird settled slowly downwards until the feet came in contact with the carcass, when the wings were stretched slowly to their greatest expanse and then carefully and slowly closed upon the sides. After alighting in this somewhat deliberate manner, a moment was given to a survey of the immediate surroundings, either for the purpose of detecting an enemy, or perhaps to confer most gracious recognition upon those other members of the feathered tribe who had at his approach by common accord moved off and now stood

at a respectful distance, patiently awaiting the pleasure of this monarch of the air as he occupied not only the head, but all of the table at this most bounteous feast. This survey completed, and having apparently convinced himself that all was plain sailing, he strode quietly up and down the body of the animal once or twice, as though to select the most advantageous position, then coming to a standstill with the legs far apart and one foot firmly planted on the hip and the other on the side, he commenced a most vigorous, even furious attack upon the carcass, using his great sharp and hooked beak as a weapon. Almost instantly a hole was made through the flank and into the abdominal cavity, where at each stroke with the powerful beak considerable sections of the intestines and other organs were torn out and eagerly devoured. . . . During the three years that I spent in Patagonia I had abundant opportunities for observing and noting the manner in which the carranchas and condors attack the fresh carcasses of dead animals, and I always observed it to be similar to that described above. The carranchas always attack the eyes first, then cut out and carry away the tongue by making a hole through the skin at the base of and between the lower jaws, while the condors prefer the abdominal viscera and, in order the more readily to get at these delicacies, they attack the carcass in the region of the flank, where the external abdominal wall is thinnest and protected by very thin skin and a rather scanty covering of hair."

Cunningham says (Natural Hist. Str. Magell., pp. 113-115): "On the return of the surveying party about noon, they reported that two condors had been seen flying about the top of the cliffs, and that one had been fired at and apparently wounded. Accordingly, soon after, I started to look for them, walking along the beach at the base of the cliffs. On coming nearly opposite the place where they had been reported as seen, I was much excited by suddenly coming within sight of no less than eight of these huge birds, half the number of which were perched on a shelf about midway up the cliff, which appeared to be habitually employed as a resting place, as it was whitened with their droppings; while the remaining four were sailing majestically about in the air, their wings widely extended and the pinions separated so as to produce a jagged edge at the tip. Although the gun which I had with me was only loaded with duck-shot, I felt impelled by an irresistible desire to get a shot at them; and accordingly, at the expense of much labor and difficulty, managed to scramble up the

lower part of the cliff by dint of planting my feet in the numerous water-worn gulleys in the hard clay. I had almost attained to within range of those on the shelf, when they slowly flapped their great wings and rose into the air, joining their companions, the whole party now soaring round in a circle above my head, gazing at me with malevolent faces, their whole aspect recalling to me the mythical descriptions of griffins. Although, in common with the rest of the tribe, the condor (*Sarcoramphus Papa*) is disfigured by a naked head, covered with mottled skin, it is truly a magnificent bird when seen in the wild condition and on the wing; and one cannot be surprised that the most exaggerated accounts were given by the older travelers of the dimensions to which it attains—as much as eighteen feet having been sometimes assigned to the expanse of the wing. It is widely distributed over the western side of the South American continent, the Cordillera appearing to constitute its headquarters. On the eastern side, on the other hand, it has a much more limited range—a steep cliff near the mouth of the Rio Negro, according to Mr. Darwin, being its northern limit on the Patagonian coast. He mentions Port Desire and the mouth of the Santa Cruz River, on the same coast, as localities where it is met with further south; and we noticed it both at Port Gallegos and in several localities in the eastern part of the Strait of Magellan, almost invariably in the neighborhood of steep cliffs."

Hudson's "Idle Days in Patagonia" has the following (pp. 56-57): "A slight adventure I had with a condor, the only bird of that species I met with in Patagonia, will give some idea of the height of this sheer wall of rock. I was riding with a friend along the cliff when the majestic bird appeared, and swooping downwards hovered at a height of forty feet above our heads. My companion raised his gun and fired, and we heard the shot rattle loudly on the stiff quills of the broad motionless wings. There is no doubt that some of the shot entered its flesh, as it quickly swept down over the edge of the cliff and disappeared from our sight. We got off our horses, and crawling to the edge of the dreadful cliff looked down, but could see nothing of the bird. Remounting we rode on for a little over a mile, until coming to the end of the cliff we went down under it and galloped back over the narrow strip of beach which appears at low tide. Arrived at the spot where the bird had been lost we caught sight of it once more, perched at the mouth of a small cavity in the face of the rocky wall near the summit, and looking at that height no bigger than a

buzzard. He was far beyond the reach of shot, and safe, and if not fatally wounded, may soar above that desolate coast, and fight with vultures and grey eagles over the carcasses of stranded fishes and seals for half a century to come."

Genus CORAGYPS Is. Geoff.

Type.

Coragyps "Isid. Geoff. St. Hilaire," Le Maout, Hist. Nat.

Ois. (1853), p. 66; Bp. Rev. et Mag. de Zool. 1854, p. 530. *C. urubu.*

Catharista, Sharpe, Cat. Bds. Brit. Mus. i. p. 23 (1874);

Sharpe, Hand-list Bds. i. p. 240 (1899) (nec Vieill.). *C. urubu.*

Cathartes, Gray, Gen. of B. i. p. 4 (1844, nec Illig.). *C. urubu.*

Geographical Range.—South America to 40° south latitude; the whole of Central America; the lower altitudes of Mexico on the eastern coast and into the United States as far north as North Carolina; not recorded from the western coast of Mexico or California.

CORAGYPS URUBU (Vieill).

Vautour du Brésil, D'Aubent. Pl. Enl. I. pl. 187 (1770).

Vultur atratus, Bartr. Trav. Carol. p. 289 (1791).

Vultur atratus, Bartram, Meyer, Zoolog. Annalen 1793, p. 290 (1794);

Iribú, Azara, Apunt. I. p. 19 (1802).

Vultur urubu, Vieill. Ois. l'Amer. Sept. pl. 2 (1807).

Cathartes fœtans, Licht. Verz. Doubl. p. 63 (1823): Hartl. Ind. Azara, p. 1 (1847); Burm. La Plata Reis. II. p. 433 (1861: Mendoza; Tucuman); Pelz Reis. Novara, Vög. p. 3 (1865: Santiago, Chili).

Cathartes urubu, Less. Voy. Coq. Zool. p. 614 (1826); id. Traité d'Orn. p. 27 (1831); d'Orb. Voy. Amer. Mérid. p. 31, pl. 1, figs. 1 [2 egg] 1835; Des Murs in Gay's Hist. Chil. Zool. I. p. 200 (1847); Phil. & Landb. Cat. Av. Chil. p. 2 (1868).

Cathartes atratus, Gould, Voy. Beagle, Birds, p. 7 (1841: Rio Negro and Rio Colorado, Patagonia); Fraser, P. Z. S. 1843, p. 108 (Mendoza & Chili); Bibra, Denkschr. AK. Wien. V. p. 128 (1853); Hartl. Naum. 1853, p. 220 (Colchagua); Cass. U. S. Expl. Exped. p. 85 (1858); Cunningh. Nat. Hist. Str. Magell. p. 248 (1871); Huds. P. Z. S. 1872, p. 536 (Rio Negro); Sci. & Salv. Nomencl. Av. Neotr. p. 123 (1873); Doering, Expl. al Rio Negro, Zool. p. 52 (1881: Valley of the Rio

Negro); Darwin, Nat. Voy. Beagle, p. 58 (1882: Patagonia); Barrows, Auk. I. p. 113 (1884: Carhué, April); Scl. & Huds. Argent. Orn. II. p. 89 (1889: Rio Negro); Graham Kerr, Ibis, 1892, p. 143 (Lower Pilcomayo, very abundant); James, New List Chil. B. p. 7 (1892); Hudson, Idle Days in Patagonia, p. 53 cum fig. (1893); Aplin, Ibis, 1894, p. 196 (Uruguay); Lane, Ibis, 1897, p. 184 (Laraquetti); Carbajal, La Patagonia, Part II. p. 259 (1900).

FIG. 269.



Coragyps urubu. P. U. O. C. 5249. Adult male. Greatly reduced.

Cathartes brasiliensis, Cass. U. S. Expl. Exped. p. 86 (1858).

Cathartes atratus brasiliensis, Schl. Mus. Pays Bas. Vultures, p. 3 (1862: Patagonia).

Catharista atrata, Baird, Brewer & Ridgw. N. Amer. B. III. p. 351 (1874); Gurney, List Diurn. B. Prey, p. 5 (1884).

Catharistes atratus, Sharpe, Cat. B. Brit. Mus. I. p. 24 (1874); Burm. An. Mus. Nac. Buenos Aires, III. part X. p. 241 (1888: Northern Patagonia); Grenzel, J. f. O. 1891, p. 115 (Córdoba); Schalow, Zool. Jahrb. Suppl. IV. p. 691 (1898: Calbuco; Coquimbo).

Catharistes urubu, Sharpe, Hand-list B. I. p. 240 (1899.)

GENERAL DESCRIPTION:

Size.—Adult male, 5249 P. U. O. C., Panasofkee Lake, Florida, 27th January, 1876. William E. D. Scott.

Total length, about 26.5 inches.

Wing, 17.0 inches.

Culmen, 2.8 inches.

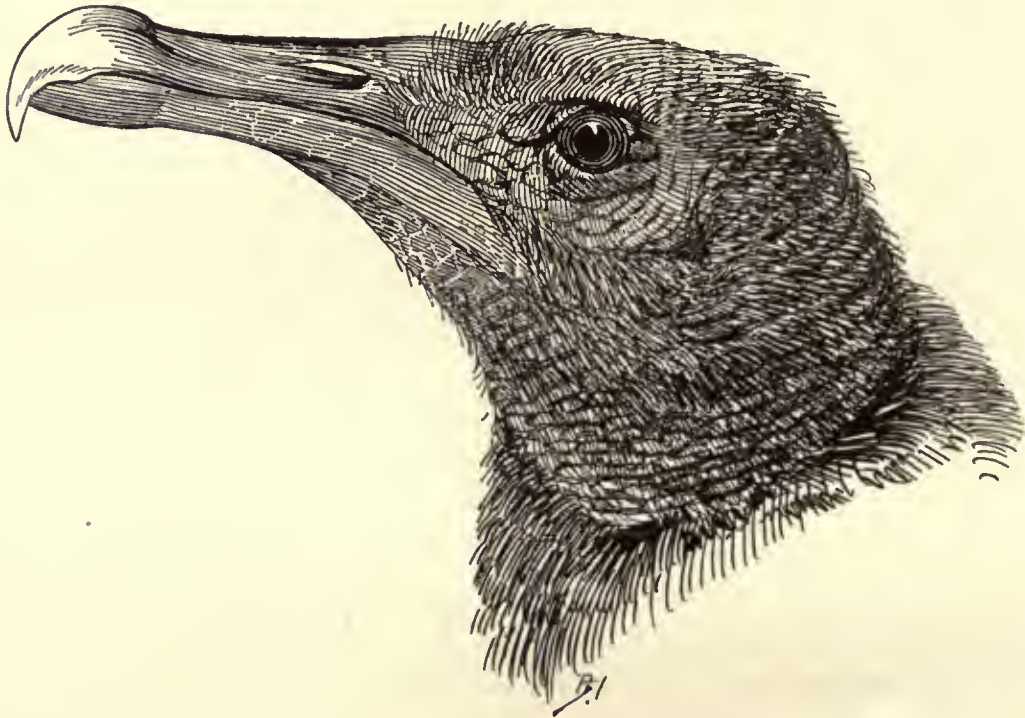
Tail, 8.3 inches.

Tarsus, 3.2 inches.

Color.—(Male cited above.)

General color: Dull uniform black; the head naked, black with scattered short black hairs.

FIG. 270.



Coragyps urubu. Adult male. P. U. O. C. 5249. Profile of head; life size.

Head: Naked; dull blackish lead-color; covered with sparse, dark hairs, thickest on the occiput.

Neck: The throat and upper neck like the head; the feathers, dull black in color, cover the lower neck and reach on the upper neck nearly to the back of the head.

Back: Back, rump and upper tail-coverts dull uniform black.

Tail: Square in shape; a very marked character always conspicuous. Dull black above; somewhat paler from below; shafts of rectrices black above and white almost to the tips below.

Wings: Primaries dull black, the shafts white both above and below, and the under surfaces hoary or white; the rest of the feathers of the wing dull uniform black.

FIG. 271.



Coragyps urubu. P. U. O. C. 5249. Detail of foot; one-half life size.

Lower parts: Dull uniform black throughout.

Bill: Dusky; the tip yellowish or white.

Feet: Dull blackish lead-color.

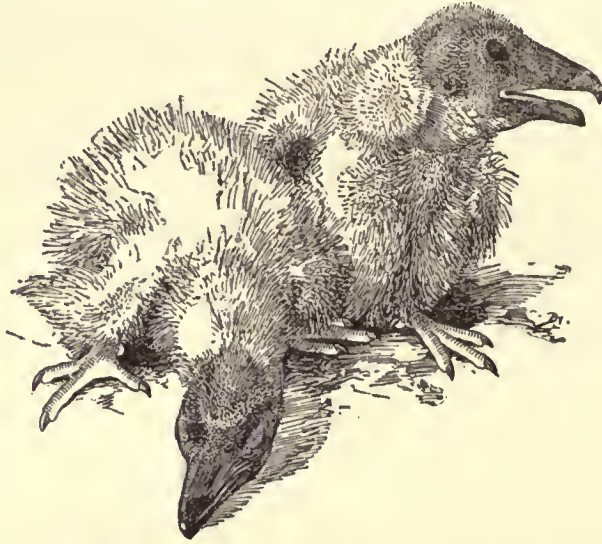
Iris: Deep hazel-brown.

The adult female is like the male in appearance, averaging a little smaller in size.

Immature birds and young of the year fully feathered do not differ mark-

edly from adults in general appearance, but there is a greater or less admixture or shading of dull brown in the plumage, not to be found in the adults.

FIG. 272.



Coragyps urubu. Young soon after hatching. One-half natural size.

Downy young are tawny buff color, darker on the head, which is downy on top, but still shows the bare part, that is to be, clearly defined through the down; the skin is dark-colored; the eyes hazel-brown; feet bluish lead-color; bill dull lead-color. These birds are very young, the egg tooth on the bill not being as yet absorbed or worn off.

Geographical Range.—South America to 40° S. latitude; the Rio Negro region of Patagonia; the whole of Central America; Mexico and North America to nearly the fortieth parallel on the eastern coast and the Mississippi Valley; not yet recorded from western Mexico or California.

Mr. Hatcher did not explore that portion of Patagonia where this vulture occurs, and the North American examples in the Princeton Museum, of which there are many in all phases of plumage, have formed a basis for the foregoing descriptions. Darwin and other noted travelers and naturalists have left to us their impressions of these birds as they occur in Patagonia and Chili and some of their observations are given below.

The birds nest on the ground in secluded places in the woods in undergrowth preferably, and sometimes close to fallen timber. In Florida I have found them nesting in dense thickets of scrub palmetto in February

and March; there is no attempt at nest building, only a hollow worn by the birds turning in the sandy ground, and two eggs are the usual number laid.

"These birds," says Darwin (Voy. Beagle, Birds, pp. 7-8), "I believe are never found further south than the neighborhood of the Rio Negro, in latitude 41° ; I never saw one in southern Patagonia, or in Tierra del Fuego. They appear to prefer damp places, especially the vicinity of rivers; and thus, although abundant at the Rio Negro and Colorado, they are not found on the intermediate plains. Azara states that there existed a tradition in his time, that on the first arrival of the Spaniards in the Plata, these birds were not found in the neighborhood of Monte Video, but that they subsequently followed the inhabitants from more northern districts. M. Al. D'Orbigny, in reference to this statement, observes that these vultures, although common on the northern bank of the Plata, and likewise on the rivers south of it, are not found in the neighborhood of Buenos Ayres, where the immense slaughtering establishments are attended by infinite numbers of Polybori and gulls. M. D'Orbigny supposes that their absence is owing to the scarcity of trees and bushes in the Pampas; but this view, I think, will hardly hold good, inasmuch as the country near Bahia Blanca, where the Gallinazo (together with the carrion-feeding gull) is common, is as bare, if not more so, than the plains near Buenos Ayres. I have never seen the Gallinazo in Chile; and Molina, who was aware of the difference between the *C. atratus* and *C. aura*, has not noticed it; yet, on the opposite side of the Cordillera, near Mendoza, it is common. They do not occur in Chiloe, or on the west coast of the continent south of that island. In Wilson's Ornithology it is said that 'the carrion crow (as this bird is called in the United States) is seldom found on the Atlantic to the northward of Newbern, lat. 35° North Carolina.' But in Richardson's "Fauna Boreali-Americana," it is mentioned, on the authority of Mr. David Douglas, that on the Pacific side of the continent it is common on the marshy islands of the Columbia,¹ and in the neighborhood of Lewis's and Clark's rivers (45° - 47° N.) It has, therefore, a wider range in the northern than in the southern half of the continent. These vultures certainly are gregarious; for they seem to have pleasure in each other's society, and are not solely brought together by the attraction of a common

¹ This record is unsubstantiated by subsequent study of the region here alluded to, and the black vulture, as has before been stated, has yet to be recorded from the Pacific coasts of Mexico and the United States.—W. E. D. Scott.

prey. On a fine day a flock may often be seen at a great height; each bird wheeling round and round in the most graceful evolutions. This is evidently done for sport; or, perhaps is connected (for a similar habit may sometimes be observed during the breeding season amongst our common rooks) with their matrimonial alliances."

Hudson in "Idle Days in Patagonia" (pp. 52-53) alludes to the species as follows: "The weather was the worst I had experienced in the country, being piercingly cold, with a violent wind and frequent storms of rain and sleet. The rough, wet boles of the trees rose up tall and straight like black pillars from the rank herbage beneath, and on the higher branches innumerable black vultures (*Cathartes atratus*) were perched, waiting all the dreary day long for fair weather to fly abroad in search of food.

"On the ground this vulture does not appear to advantage, especially when bobbing and jumping about, performing the 'buzzard lope,' when quarreling with his fellows over a carcass; but when perched aloft, his small naked rugous head and neck and horny curved beak seen well-defined above the broad black surface of the folded wing, he does not show badly. As I had no wish to make a bag of vultures and saw nothing else, I shot nothing."

Genus CATHARTES Illiger.

Type.

Cathartes, Illiger, Prodr. Syst. Mamm. et Av. p. 236 (1811);

Sharpe, Hand-list Bds. i. p. 240 (1899). *C. aura*.

Catharista Vieill, Analyse, p. 21 (1816 nec auct. recent . . . *C. aura*.

Rhinogryphus, Ridgw. Baird, Brewer, and Ridgway, Bds. of N.

A. iii. p. 337 (1874) *C. aura*.

Cænops, Sharpe, Cat. Bds. Brit. Mus. i. p. 22 (1874) *C. anra*.

Geographical Range.—The whole of South America; the Falkland Islands; Central America; North America north to southern New England, on the Eastern Coast, in the interior to the Saskatchewan and on the Pacific Coast to British Columbia.

CATHARTES AURA (Linnæus).

The Turkey Buzzard, Catesby, Nat. Hist. Carol. I. p. 6, pl. 6 (1730).

Vultur aura, Linn. Syst. Nat. I. p. 86 (1758); Vieill. Ois. l'Amér. Sept.

pl. 2 bis (1807); Darw. Nat. Voy. Beagle, p. 58 (1882).

Vultur iota, Molina, Sagg. St. Nat. Chil. p. 321 (1789).

Acabirdy, Azara, Apunt. I p. 24 (1802).

Catharista aura, Vieill. Analyse, p. 22 (1816); id. Gal. Ois. I. p. 16, pl. 4 (1825).

FIG. 273.



Cathartes aura. Adult male. About one-sixth natural size.

Cathartes aura, D'Orb. Voy. Amer. Mérid. p. 38, pl. 1, figs. 3 [4 egg] (1835); Darw. Voy. Beagle, Birds, p. 8 (1841: Tierra del Fuego; West Patagonia); Hartl. Ind. Azara, p. 1 (1847); Des Murs in Gay's Hist. Chil. Zool. I. p. 202 (1847); Burm. La Plata Reis. II. p. 433 (1861: Mendoza; Catamarca; Tucuman); Pelz. Reis. Novara, Vög. p. 3 (1865: Chili); Phil. & Landb. Cat. Av. Chil. p. 2 (1858); Scl. & Salv. Ibis, 1869, p. 284 (Hasleyn Cove, Messier Channel, May);

- Cunningh. Nat. Hist. Str. Magell. p. 355 (1871); Scl. & Salv. Nomencl. p. 123 (1873); White, P. Z. S. 1882, p. 624 (Concepcion, Misiones, June, abundant); Scl. & Huds. Argent. Orn. II. p. 89 (1889: Patagonia, not common); Oust. Miss. Scient. Cap Horn, Oiseaux, pp. 6, 324 (1891); Graham Kerr, Ibis, 1892, p. 143 (Lower Pilcomayo, very abundant); James, New List Chil. B. p. 9 (1892); Lataste, Actes Soc. Scient. Chil. III. p. cxv (1893: Cordilleras); Lane, Ibis, 1897, p. 184 (Corral); Schalow, Zool. Jahrb. Suppl. IV. p. 691 (1898: Iquique, May); Sharpe, Hand-list B. I. 240 (1899); Carbajal, La Patagonia, Part ii, p. 259 (1900).
- Cathartes iota*, Fraser, P. Z. S. 1843, p. 108 (Chili, common along the coast).
- Cathartes jota*, Hartl. Naum. 1853, p. 220; Cass. U. S. Expl. Exped. p. 73 (1858: Callao).
- Rhinogryphus aura*, Baird, Brewer & Ridgw. N. Amer. B. III. p. 344 (1874); Sharpe, Cat. B. Brit. Mus. I. p. 455 (1874); id. Journ. Linn. Soc. Zool. xiii, p. 21 (1876); id. P. Z. S. 1881, p. 9 (Tom Bay, April); Vincig. Boll. Soc. Geogr. Ital. (2) IX. p. 797 (1884); Gurney, List Diurn. B. Prey. p. 4 (1884).
- Enops aura*, Sharpe, Cat. B. Brit. Mus. I. p. 25 (1874); Burm. An. Mus. Nac. Buenos Aires, III. part X. p. 241 (1888: Patagonia; Tierra del Fuego); Martens, Hamb. Magalh. Sammelr. p. 5 (1900: South Patagonia).
- Catharistes aura*, Frenzel, J. f. O. 1891, p. 115 (Córdoba).

GENERAL DESCRIPTION:

Size.—Adult male, 4827, P. U. O. C.

Total length, about 31.00 inches.

Wing, 22.00 inches.

Culmen, 2.5 inches.

Tail, 11.5 inches.

Tarsus, 2.8 inches.

Color.—(Male cited above.)

General color: Black with a gloss of bluish purple. Head and upper neck naked.

Head: Naked; slightly wrinkled; bright red in the live bird.

Neck: The back of the head often with a scattered down of hair and the

lores and top of the head are sometimes decorated with wart-like papillæ, pearly white in color. Upper neck naked and colored like the head; lower neck feathered all around, black, with bluish shade.

Back: Back, rump and upper tail-coverts, black, with purplish blue shade.

Tail: Black, with a bluish shade, seen from above; from below, more or less ashy grey; shafts brown from above; yellow-white from beneath.

Wings: Black, with purple-blue gloss; the primaries dull brownish black, with shafts deep brown above and yellow-white from beneath. The secondaries paler than the primaries and not glossed or with any reflections; the edges of the secondaries, scapulars and wing-coverts with margins of light ashy brown; this margin is not abrupt and varies much in width and tone in different individuals. The primaries are ashy, when seen from beneath; the lower wing-coverts and axillaries black.

Lower parts: Uniform dull black, darker than above, with a bare crop patch on the upper chest.

Bill: Varies from pale yellowish white, with a pure white tip, to pure chalky white.

Feet: Legs and feet pale yellowish brown.

Iris: Deep hazel-brown.

The sexes do not differ in appearance.

Immature birds are similar to the adults, but the general color is brownish black, the bare skin of the head and neck livid dusky, the bill deep horn-brown and the feet and legs of a light shade.

Downy young are nearly pure white; the head is naked, as is the upper neck, and dusky leadish in color.

Geographical Range.—North America, breeding only in the southern part of its range, but migrating more or less regularly north to New England and New York on the Atlantic side; in the interior migrating to Saskatchewan, and on the Pacific side to British Columbia, about 49° north. The whole of Mexico, Central America and the West Indies; South America south to Patagonia and Chili; not reaching far into either territory; the Rio Negro region of Patagonia.

With some hesitation we have defined the southern range of the Turkey Buzzard; but if we consider this bird specifically distinct from the form generally found in Chili, in Patagonia, at the Straits of Magellan, in Tierra del Fuego and the Falkland Islands, the above account of the distribution of *C. aura* in its southern range must be accepted. While the

differences between the two species seem constant, it appears that *C. falklandicus* is not more divergent from the rest of the Turkey Buzzard stock of North and South America than are the many geographical races distinguishing forms of birds that have a wide geographic distribution. But at the time of the present work not enough light has been shed on this particular problem to warrant any change from the present accepted status of the two birds. Dr. Sharpe believes the two forms to be distinct, while on the other hand Mr. Ridgway does not even accord to the birds from the Straits of Magellan and the Falkland Islands any difference in position, including all under the true *C. aura*.

So much has been written of this vulture that it hardly seems essential to do more than refer to the citations preceding the description; however, a few salient notes are given below. Mr. Barrows writes: "I am not sure that I ever saw *Cathartes aura*, not being familiar with its appearance on the wing, but I find the following in my note-book, under date of March 4, 1880, while camped at the foot of the Sierra de Ventana.

"Several times since camping here I have seen a very large bird which seems to me larger in the body than the common eagle (*G. melanoleucus*) and with a very long tail. They hunt over the mountains as well as over the level ground and rise in spirals nearly as well as *Haliæetus*. I remember that when attacked by a pair of the latter, which probably had an eyrie among the crags near by, they soon distanced them by rising in spirals, though both species did considerable flapping before the eagles abandoned the pursuit. I thought at the time, and am still inclined to believe, that this bird was *Cathartes aura*." (Barrows, Birds of the Lower Uruguay, Auk, 1, p. 113, foot-note, 1884.)

Hudson does not consider the Turkey Buzzard as a common bird in that part of Patagonia where the whole fauna had been revealed to him by years of study. Mr. Hatcher did not find the bird or record it in the course of his investigations.

Darwin writes: "The turkey buzzard, as it is generally called in English, may be recognized at a great distance from its lofty soaring and most graceful flight. It is generally solitary, or, at most, sweeps over the country in pairs. In Tierra del Fuego, and on the coast of Patagonia, it must live exclusively on what the sea throws up, and on dead seals; wherever these animals in herds were sleeping on the beach, this vulture might be seen, patiently standing on some neighboring rock." (Zool. Voy. Beagle, Birds, p. 8, 1841.)

Dr. Bowdler Sharpe (p. 25, 1881, pp. 9-10) discusses two specimens obtained by Dr. Coppinger. These were:

"Male: Tom Bay, April 11, 1879. Iris dark; eyelids and cere flesh-color; bill horn-color; legs dirty yellow.

"Female: Tom Bay, April 11, 1879. Eyes dark; skin of head and neck light red; legs and feet dirty grey.

"The two specimens sent by Dr. Coppinger would appear, from a comparison of the skins, to be of the same species as the ordinary *Rhinogryphus aura* of North America. I have already determined Chilian specimens in the British Museum as belonging to the last-named species; and, as far as I can now judge from the increased series in that collection, the grey-winged Vultures are confined to the Falkland Islands. I presume that Dr. Coppinger's specimens are a pair, male and female being shot on the same day—the difference in the colour of the soft parts being a very noticeable feature; while I must at the same time admit that the female with her 'light red' head has more grey edgings to the wing feathers than the male, and thus shows an approach to *R. falklandicus*."

CATHARTES FALKLANDICUS (Sharpe).

Cathartes aura, Less. (nec Linn.) Voy. Coq. Zool. I. p. 614 (1826: Falklands); Darw. Voy. Beagle, Birds, p. 8. part (1841: Falkland Islands); Gould, P. Z. S. 1859, p. 93 (egg descr.); Abbott, Ibis, 1860, p. 432 (Falkland Islands); Schl., P. Z. S. 1860, p. 383; Abbott, Ibis, 1861, p. 149 (Falkland Islands, resident, breeds in November); Schl. Mus. Pays Bas, Vultures, p. 3 (1862: Falkland Islands); Schl. & Salv. P. Z. S. 1878, p. 435; iid. Voy. Chall. II. Birds, pp. 105, 150 (1881: Falkland Islands); Oust. Miss. Scient. Cap Horn, Oiseaux, p. 6. part (1891).

Milvago australis, Schl. (nec Gm.), Ibis, 1860, pl. i, fig. 2 (egg) [teste Abbott, t. c. p. 432].

Catharista falklandica, Sharpe, Ann. Nat. Hist. (4) xi, p. 133 (1873).

Ænops falklandicus, Sharpe, Cat. B. Brit. Mus. I. p. 27, pl. ii, fig. 1 (1874); Burm. An. Mus. Nac. Buenos Aires, III. part X. p. 241 (1888: Falkland Islands); Martens, Hamb. Magalh. Sammelr. p. 5 (1900: Falkland Islands).

Rhinogryphus falklandicus, Sharpe, Cat. B. Brit. Mus. I. p. 455 (1874); id. P. Z. S. 1881, p. 10; Vincig. Boll. Soc. Geogr. Ital. (2) IX. p. 797 (1884); Gurney, List-Diurn. B. Prey, p. 4 (1884).

Cathartes falklandicus, Sharpe, Hand-list B. I. p. 240 (1899: Falkland Islands; Patagonia; Chili); Salvad. Ann. Mus. Genov. (2) xx, p. 612 (1900: Keppel Isl., Falkland Islands).

FIG. 274.



Cathartes falklandicus, adult male. P. U. O. C. 8998. About one-sixth natural size.

GENERAL DESCRIPTION.

Size.—Adult male, P. U. O. C. 8998, Chili, March, 1898. Exchange from Museo de La Plata. Orig. No. 2.

Total length, about 29.00 inches.

Wing, 19.0 inches.

Culmen, 3.0 inches.

Tail, 10.7 inches.

Tarsus, 2.7 inches.

This form averages a little smaller than *C. aura*.

FIG. 275.



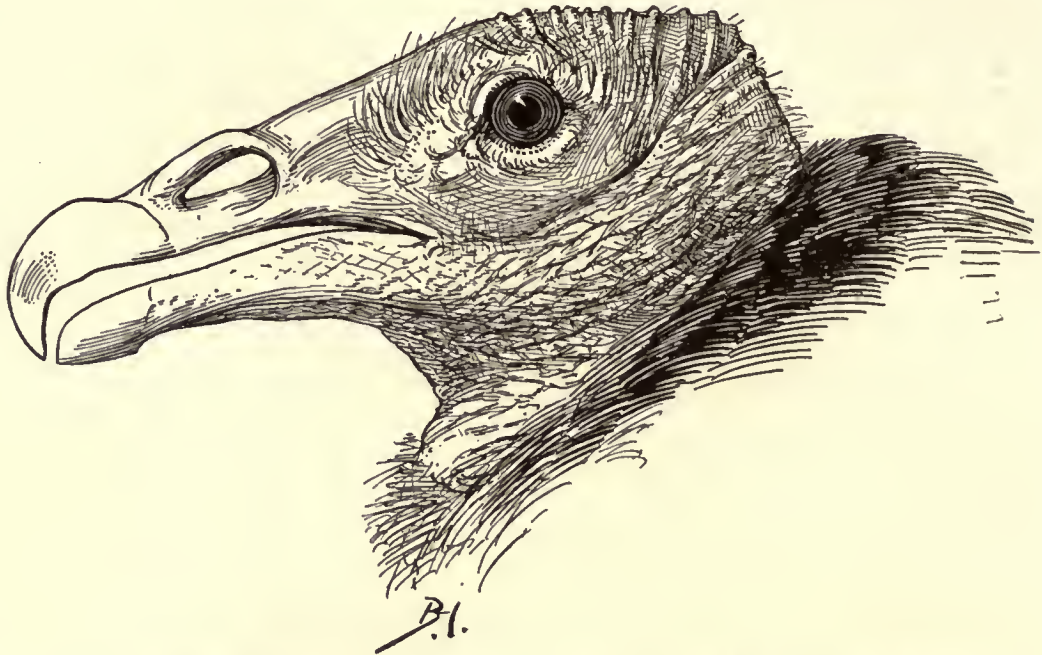
C. falklandicus. P. U. O. C. 8998. Showing lower surface. About one-sixth natural size.

Color.—(Adult male cited above.) Black; averaging darker than in *C. aura*; the gloss blue-green and noticeable particularly on the back, the shoulders, the upper surface of the tail-feathers; the feathers of the back and interscapular region edged with dull brown; the secondaries and median wing-coverts edged with whitish of an ashy tone; this character is very variable and though always present is much more decided in some individuals than in others. Head said to be clear pink in live birds and not bright red as in *C. aura*. Bill yellowish white; the tip pure white. Iris hazel-brown. The under parts are slightly glossed with green-black and the crop patch is bare like that of *C. aura*.

This comparative description will serve to define this form from its close congener.

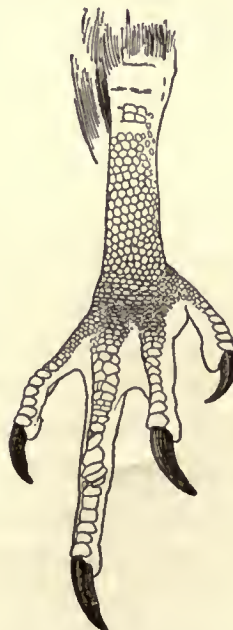
Geographical Range.—Southern Chili and Patagonia; Tierra del Fuego; the Falkland Islands.

FIG. 276.



C. falklandicus, adult male. P. U. O. C. 8998. Details of head. Life size.

FIG. 277.



C. falklandicus. P. U. O. C. 8998. Detail of foot. One-half natural size.

This form of the Turkey Buzzard was not found by the naturalists sent by Princeton to Patagonia; the descriptions are based on two birds, a pair from the Museo de La Plata in exchange. Both birds were taken in Chili in March, 1898, and appear to be typical birds of the kind known as *C. falklandicus*. The gloss on the birds is certainly different in color and more pronounced than in *C. aura*; otherwise the birds are much alike, save for the ashy white on the median coverts and secondaries, which is accentuated more particularly in the female bird.

Order ACCIPITRIFORMES.

Sharpe, *Classif. Bds.* p. 78 (1891); Sharpe, *Hand-list Bds. i.* p. 241 (1899).

Family FALCONIDÆ.

Sharpe, *Cat. Bds. Brit. Mus. i.* p. 30 (1874); Sharpe, *Hand-list Bds. i.* p. 243 (1899).

Subfamily POLYBORINÆ.

Sharpe, *Cat. Bds. Brit. Mus. i.* p. 30 (1874); Sharpe, *Hand-list Bds. i.* p. 243 (1899).

Genus POLYBORUS Vieill.

Type.

Polyborus, Vieill. *Analyse*, p. 22 (1816); Sharpe, *Cat. Bds.*

Brit. Mus. i. p. 31 (1874); Sharpe, *Hand-list Bds. i.* p.

243 (1899) *P. plancus*.

Caracara, Less. *Traité*, p. 34 (1831) *P. plancus*.

Geographical Range.—South America, south to Cape Horn, Central America and Mexico, reaching into the southern border of the United States.

POLYBORUS PLANCUS (Miller).

Le Busard du Brésil, Briss. *Orn. I.* p. 405 (1760); Plaintive Eagle, Lath.

Gen. Syn. I. p. 34 (1781: Tierra del Fuego).

Brazilian Kite, Lath. *t. c.* p. 63 (ex Briss.)

Falco plancus, Miller, *Var. Subj. Nat. Hist. pl.* 17 (1778: Tierra del Fuego.)

Falco tharus, Molina, *Saggio St. Nat. Chil. p.* 234 (1782); *Gm. Syst. Nat. I. p.* 254 (1788).

Falco plancus, *Gm. Syst. Nat. I. p.* 257 (1788: ex Lath. p. 34).

- Falco brasiliensis*, Gym. t. c. p. 262 (ex Lath. p. 63); King, Zool. Journ. III. p. 423 (1827: Port Famine).
- Vultur plancus*, Lath. Ind. Orn. I. p. 8 (1790); Forst. Descr. Anim. p. 321 (1844: Straits of Magellan).
- Caracara*, Azara, Apunt. I. p. 42 (1802: La Plata).
- Crax caracara*, Lacep. & Dand. Buffon, Hist. Nat. (12^{mo}. Didot), xiv. (Tabl. Ois.) p. 301 (1799).
- Falco cheriway*, Licht. (nec. Jaq.) Verz. Doubl. p. 60 (1823: Montevideo).
- Polyborus brasiliensis*, Vig. Zool. Journ. I. p. 320 (1824); Darw. Voy. Beagle, Birds, p. 9 (1841: Rio Negro & Rio Colorado; Santa Cruz, Patagonia, April); Frazer, P. Z. S. 1843, p. 108 (Chili); Hartl. Ind. Azara, p. 1 (1847); id. Naum. 1853, pp. 208, 220; Pelz. Reis. Novara, Vög. p. 6 (1865: Chili); Darw. Nat. Voy. Beagle, p. 55 (1882: Patagonia).
- Polyborus vulgaris*, Spix, Av. Bras. I. p. 3, pl. 1 (1824); Vieill. Gal. Ois. p. 23, pl. vii. (1825); D'Orb. Voy. Amer. Mérid. p. 55 (1835: Coast of Patagonia); Burm. La Plata Reis. II. p. 434 (1861); Durnf. Ibis, 1877, p. 40 (Chupat Valley, very common, breeding); Burm. An. Mus. Nac. Buenos Aires, III. part x. p. 241 (1888: throughout Patagonia).
- Caracara vulgaris*, Less. Voy. Coq. Zool. I. p. 615 (1826); id. Traité d'Orn. p. 34 (1831); Des Murs in Gay's Hist. Chil. Zool. I. p. 207 (1847); Chil. Cat. Av. Chil. p. 2 (1868); Lataste, Actes Soc. Scient. III. p. CIV. (1893; Nuble, foot of Cordilleras, Nov.).
- Pandion caracara*, J. E. Gray in Griffith's ed. Cuv. Anim. Kingd. VI. p. 235 (1829).
- Circæetus brasiliensis*, Cuv. Règn. Anim. I. p. 328 (1829).
- Aquila cheraway*, Meyen (nec. Jaq.) Beitr. p. 66 (1834: Northern Chili, March).
- Polyborus tharus*, Strickl. Orn. Syn. p. 18 (1855); Cass. U. S. Expl. Exped. p. 100 (1858: Rio Negro, Patagonia, Feb.; Valparaiso, April); Scl. & Salv. Ibis, 1868, p. 188 (Gregory Bay, May; Elizabeth Isl., Feb.), 1870, p. 499 (Island of Quehny, Nov.); Huds. P. Z. S. 1872, p. 536 (Rio Negro); Scl. & Salv. Nomencl. Av. Neotr. p. 123 (1873); Durnf. Ibis, 1876, p. 161 (Entrerios and Belgrano, Sept. breeding); Scl. P. Z. S. 1876, p. 333, pl. xxv (Patagonia); Durnf. Ibis, 1877, p. 188 (Buenos Aires, abundant resident, Baradero,

April), 1878, p. 389 (Central Patagonia, abundant resident); Gurney, P. Z. S. 1878, p. 231; Scl. & Salv. t. c. p. 435; Gibson, Ibis, 1879, p. 415 (Cape San Antonio, Buenos Aires, common, breeds Sept.-Nov.); Scl. & Salv. Voy. Chall. II. Birds, p. 105 (1881: Isthmus Harbor; Port Churrucha); Sharpe, P. Z. S. 1881, p. 10 (Port Henry, Straits of Magellan, Jan.; Tom Bay, March); Doering, Expl. al Rio Negro, Zool. p. 51 (1881: Rio Colorado & Rio Negro); White, P. Z. S. 1883, p. 41 (Cosquin, Cordova, July); Vinicig. Exped. Austr. p. 57 (1883); id. Exped. Patagonia, p. 58 (1883); id. Boll. Soc. Geogr. Ital. (2) ix, p. 797 (1884); Barrows, Auk, I. p. iii (1884; Concepcion, abundant, breeds Sept. to Nov.); Gurney, List Diurn. B. Prey, p. 12 (1884); Scl. & Huds. Arg. Orn. II. p. 81 (1889); Ridgw. Proc. U. S. Nat. Mus. XII. p. 136 (1889: Elizabeth Island); Holland, Ibis, 1890, p. 425 (Arg. Rep.); Oust. Miss. Scient. Cap Horn, Oiseaux, pp. 9, 324 (1891: Orange Bay); Frenzel, J. f. O. 1891, p. 115 (Cordoba); Graham Kerr, Ibis, 1892, p. 143 (Lower Pilcomayo, abundant); James, New List Chil. B. p. 7 (1892); Huds. Natural. in La Plata, p. 119 (1892: id. Idle Days in Patagonia, p. 175 (1893); Holland, Ibis, 1892, p. 204 (Estancia Espartilla, common resident, breeds in Oct.); Aplin, Ibis, 1894, p. 196 (Uruguay); Lane, Ibis, 1897, p. 183 (Rio Bueno, very common); Schalow, Zool. Jahrb. Suppl. IV. p. 692 (1898: Puerto Rosaleo, Llanquihue, Nov.; Cape Espiritu Santo, Feb.; Punta Arenas, Feb.); Sharpe, Hand-list B. I. p. 242 (1899); Salvad. Ann. Mus. Genov. (2) xx, p. 613 (1900: Penguin Rookery, Feb.; Rio Pescado, May; Punta Arenas, May & June; Possession Bay, July); Carbajal, La Patagonia, Part II. p. 257 (1900); Martens, Hamb. Magalh. Sammelr. p. 5 (1900: Tierra del Fuego & Patagonia); Albert, Contr. Av. Chil. II. p. 559 (1901).

GENERAL DESCRIPTION.

Size.—Adult male. 7894 P. U. O. C. Rio Gallegos, Patagonia, 20 May, 1896. J. B. Hatcher. Or. No. 11.

Total length, about 23.50 inches.

Wing, 17.00 inches.

Culmen, 2.00 inches.

Tail, 10.5 inches.

Tarsus, 4.3 inches.

The sexes do not vary in size; there is much individual variation however.

Color.—Adult male cited above. Adults of either sex are alike when in adult plumage.

FIG. 278.



Polyborus plancus, adult male. P. U. O. C. 7894. About one-fourth natural size.

Head: A crested cap reaching from the base of the bill, above the eyes backward to the occiput, where the feathers are elongated, dark seal-brown; region in front of the eyes, and sides of the face pale isabelline, sometimes almost buffy white.

Neck: Pale isabelline or buffy white; immaculate on the throat, and barred with dark seal-brown barring elsewhere, the barring giving more prominence to the dark than to the light color.

Back: Interscapular region, back, rump and upper tail-coverts dark seal-brown, barred with isabelline or buffy white; the dark color preponderates on the upper back and the light color on the rump and upper tail-coverts.

FIG. 279.

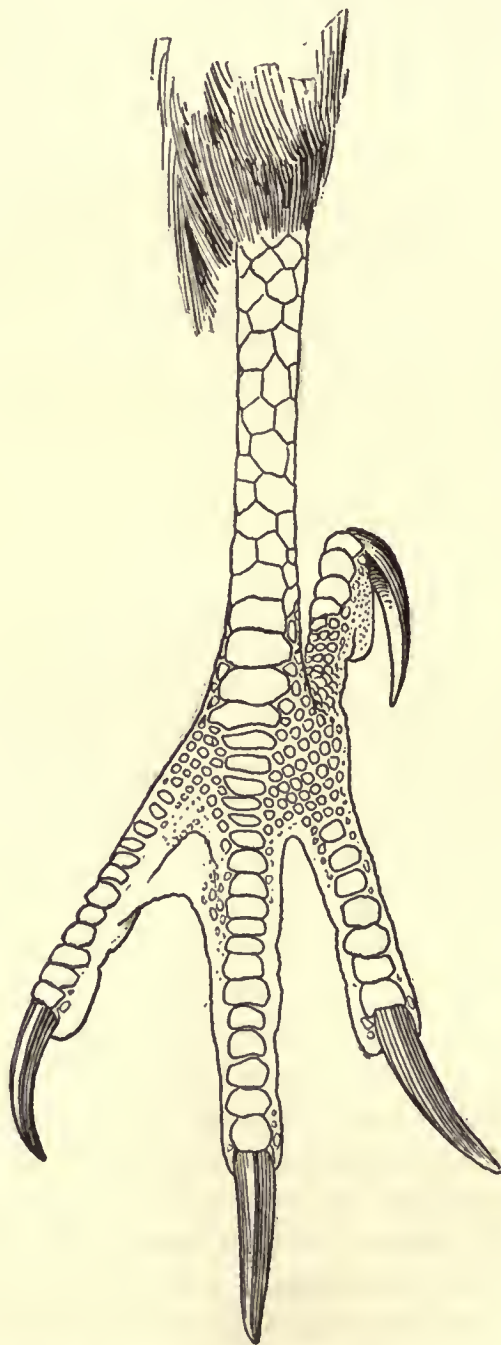


Polyborus plancus. P. U. O. C. 7894. Adult male. Details of head. Natural size.

Tail: Pale isabelline or buffy white, with a broad terminal band of deep seal-brown; the light part of the tail crossed by many, twelve or more, narrow deep seal-brown bars; the light color predominates on this part of the tail.

Wings: Primaries dark seal-brown at their tips; the remainder white or isabelline, freckled and vermiculated on their upper surfaces with dark seal-brown; on their inferior sides immaculate buffy white, or isabelline; the shafts dull ivory-white; the secondaries somewhat lighter in shade than the terminal seal-brown of the primaries and with buffy white tips very narrow and sometimes obsolete; scapulars and median wing-coverts dark seal-brown, barred with narrow isabelline or buffy white; rest of the upper wing-coverts dark seal-brown, with more or less obsolete barring of a fainter shade; under wing-coverts and axillaries uniform dark seal-brown, sometimes barred obsoletely with lighter shades of the same color.

FIG. 280.

*Polyborus plancus.* Right foot. Natural size.

Lower parts: The chest and breast dark seal-brown, narrowly barred with buffy white or isabeline; a bare crop-patch on the breast; the belly

and sides, as well as the thighs, dark seal-brown, narrowly barred with whitish, or isabeline; the under tail-coverts have the white areas predominating, so as to be in the main light, narrowly barred with dark seal-brown.

Bill: Dark horn-blue; cere and bare skin about eye carmine-red, or yellow of greater or less brilliancy according to season.

Iris: Deep hazel-brown. Crop-patch yellow.

Feet: Yellow.

FIG. 281.



Polyborus plancus. Immature female. About one-fifth natural size.

Immature Birds.—Head: Brown patch dull brown, with intermixture of rufous and buffy shading; this crown-patch reaches from the base of the bill backward above the eyes and is not as well defined as in the adult; the region in front of the eye unfeathered and with many scattered bristling hairs, almost black in color; sides of the head and face tawny buff.

Neck: Tawny buff below and brown of a rusty dull shade with tawny buff in the center of each feather, often taking the form of an irregular median stripe.

Back: Interscapular region, upper and mid-back of dull brown, each feather streaked medianly with dull buff, widening to form a tip of that color, irregular in shape at the terminus; lower back pale ashy brown, the feathers obsolete barred and marked with dirty white; rump dirty white, the feathers barred irregularly with pale ashy brown; upper tail-coverts dirty white, without barring, except at the base of some of the coverts closest to the rump.

Tail: Dirty yellowish white, with fourteen or more rather obsolete bars of pale ashy brown and a broad terminal band, an inch and a quarter, of the same color.

Wings: Primaries, pale ashy brown for the terminal third; the other two-thirds whitish, more or less distinctly vermiculated and obsoletely barred with pale ashy brown; secondaries nearly the shade of the upper back, barred with rusty brown of a lighter shade and tipped with dirty yellowish white; tertials much like the secondaries, but with more pronounced yellowish white terminally; upper wing-coverts dull brown, the feathers becoming paler at the ends and often buff in splotches, giving to the whole an irregular mixed brown and dull buff appearance; under wing-coverts and axillaries deeper seal-brown.

Lower parts: Dull brown, each feather with a distinct median stripe and an irregular terminus of dirty buff, in some parts nearly obscuring the pattern; the thighs and flanks darker brown and obsoletely and faintly barred with dull buff; under tail-coverts dirty white, with some obscure brown barring on those nearest the vent.

Bill: Grey horn-color; the cere orange-yellow.

Iris: Hazel-brown. Bare crop-patch orange-yellow.

Feet: Yellow obscured by lead-color, which prevails on the tarsi.

Downy young: Covered with a dull white down, often buffy in tone.

The following are the colors of eyes, cere and tarsi given by Sharpe and White:

"Male juv.: Port Henry, Straits of Magellan, January 25, 1879. Cere fleshy grey; eyes black.

"Female juv.: Port Henry, January 25, 1879. Cere orange; tarsi grey and yellow.

"Female ad.: Tom Bay, March, 1879. Bill grey; cere orange-yellow; tarsi grey; feet yellow; claws black." (Sharpe, P. Z. S. 1881, p. 10.)

"Female. Cosquin, Córdova, Arg. Rep., July 27, 1882. Iris brown. Carancho." (E. W. White, P. Z. S. 1883, p. 41.)

Geographical Range.—South America from the Straits of Magellan and Fuegian Islands to Cape Horn, north on the east coast as far as the mouth of the Amazons, on the Pacific coast to 20° south latitude.

Mr. Hatcher and his assistants found this bird in most of the localities they visited in Patagonia, where the birds are common and generally distributed. The breeding season begins in September in the region here

considered and probably continues till early in December according to the latitude. They make nests of sticks and coarse material generally in trees but also in bushes and on the shelves on the faces of cliffs. From two to four eggs are laid and but a single brood is reared each year.

This is the bird generally meant when the term *carrancha* is used and the accounts in Mr. Hatcher's "Narrative" will give some idea of its abundance and boldness as well as its fearless association with man, as he encountered it at the different camps he made in Patagonia; the point of view of other writers is also appended in this connection from widely separate points in the range of these vulture-like hawks.

O. V. Aplin says of it in Uruguay (*Ibis*, p. 196, 1894): "Common, but not abundant, becoming more so, however, in autumn when the merinos begin to lamb. Two fledged young, with wings and tail half-grown, and an egg also were brought in on the 3d November. On the 26th November I saw a bird sitting on its nest in the top of a tala bush on an island in a deep laguna of the Arroyo Grande; the nest appeared to be formed of sticks and wool. I was informed that they usually breed on the flat tops of rocks and on the ground; the nests I saw in trees were hung structures. On 7th April I saw five flying together—two of them fighting in the air, uttering harsh croaks, and on the 25th May I saw seven together in the evening."

Darwin in the *Voyage of the Beagle* (*Birds*, pp. 9–11, 184), says: "Although abundant on the open plains of this eastern portion of the continent, and likewise on the rocky and barren shores of the Pacific, nevertheless it inhabits the borders of the damp and impervious forests of Tierra del Fuego and the broken coast of West Patagonia, even as far south as Cape Horn. The Carranchas (as the *Polyborus brasiliensis* is called in La Plata), together with the *P. chimango*, attend in great numbers the estancias and slaughtering houses in the neighborhood of the Plata. If an animal dies in the plain, the *Cathartes atratus* or Gallinazo commences the feast, and then these two carrion-feeding hawks pick the bones clean. Although belonging to closely-allied genera, and thus commonly feeding together, they are far from being friends. When the Carrancha is quietly seated on the branch of a tree, or on the ground, the Chimango often continues flying backwards and forwards for a long time, up and down in a semicircle, trying each time, at the bottom of the curve, to strike its larger relative. The Carrancha takes little notice, except by

bobbing its head. Although the Carranchas frequently assemble in numbers, they are not gregarious; for in desert places they may be seen solitary, or more commonly by pairs. Besides the carrion of large animals, these birds frequent the borders of streams and the sea-beach, for the sake of picking up whatever the waters may cast on the shore. In Tierra del Fuego, and on the west coast of Patagonia, they live almost exclusively on this last means of supply.

"The Carranchas are said to be very crafty, and to steal great numbers of eggs; they attempt, also, together with the Chimango, to pick the scabs off the sore backs of both horses and mules. On the one hand, the poor animal, with its ears down and its back arched and, on the other, the hovering bird, eyeing at the distance of a yard, the disgusting morsel, form a picture which has been described by Captain Head with his own peculiar spirit and accuracy. The Carranchas kill wounded animals; but Mr. Bynoe (the surgeon of the Beagle) saw one seize in the air a live partridge, which, however, escaped, and was for some time chased on the ground. I believe this circumstance is very unusual: at all events there is no doubt that the chief part of their sustenance is derived from carrion. A person will discover their *necrophagous* habits by walking out on one of the desolate plains, and there lying down to sleep; when he awakes, he will see on each surrounding hillock, one of these birds patiently watching him with an evil eye. It is a feature of the landscape of these countries which will be recognized by every one who has wandered over them. If a party goes out hunting with dogs and horses, it will be accompanied during the day by several of these attendants. The uncovered craw of the Carrancha, after feeding, protrudes from its breast; at such times it is, and indeed generally, an inactive, tame and cowardly bird. Its flight is generally heavy and slow, like that of the English carrion crow, whose place it so well supplies in America. It seldom soars; but I have twice seen one at a great height gliding through the air with much ease. It runs (in contradistinction to hopping), but not quite so quickly as some of its congeners. At times the Carrancha is noisy, but is not generally so; its cry is loud, very harsh and peculiar, and may be compared to the sound of the Spanish guttural *g*, followed by a rough double *rr*. Perhaps the Spaniards of Buenos Ayres, from this cause, have called it Carrancha. Molina, who says it is called Tharu in Chile, states, that when uttering its cry, it elevates its head higher and higher, till at last, with its beak wide open, the

crown almost touches the lower part of the back. This fact, which has been doubted, is true; for I have myself several times seen them with their heads backwards, in completely inverted position. The Carrancha builds a large coarse nest, either in a low cliff or in a bush or lofty tree. To these observations I may add, on the high authority of Azara, whose statements have lately been so fully confirmed by M. D'Orbigny, that the Carrancha feeds on worms, shells, slugs, grasshoppers, and frogs; that it destroys young lambs by tearing the umbilical cord; and that it pursues the Gallinazos and gulls which attend the slaughtering houses, till these birds are compelled to vomit up any carrion they may have lately gorged. Lastly, Azara states that several Carranchas, five or six together, will unite in chase of large birds, even such as herons. All these facts show that it is a bird of very versatile habits and considerable ingenuity."

In his Natural History of the Straits of Magellan (1871, pp. 133-134), Cunningham says: "In the course of our expedition we observed a few snipe and many large carrion-feeding hawks. These birds, the carranchas (*Polyborus tharus*), are extremely common on the grassy plains, and their vulturine habits, as Mr. Darwin has observed, 'are very evident to any one who has fallen asleep on the desolate plains of Patagonia; for when he wakes, he will see, on each surrounding hillock, one of these birds patiently watching him with an evil eye.' When thus perched, they assume a very erect posture, and I have frequently mistaken one in the distance for a human creature. The plumage is handsome, but the naked skin over the crop, which protrudes after a meal, communicates an unpleasant aspect to them; and they are exceedingly disagreeable to skin, as they are invariably swarming with minute and very active Anoplura."

Hudson, writing of the Caracara in Argentina says (P. Z. S. 1870, p. 112): "South of the city of Buenos Ayres, the low shore of the river is from six to eight miles in width; but for more than half this width the portion furthest from the river is frequently inundated, and covered with reeds and aquatic plants. Passing this there occurs a strip of light and dry land, running parallel with the river, composed chiefly of fossil shells, and grown over with a forest of low trees. In some places this high ground is extremely narrow; in others there are great breaks in it, through which the river passes when greatly swollen. In this strip of forest may be found all the birds inhabiting Buenos Ayres that perch on trees, not even excepting the Pampas Woodpecker (*Colaptes campestris*), of which

Mr. Darwin has so unfortunately said: 'It is a Woodpecker which never climbs a tree' (Origin of Species, p. 165). I will reserve for another letter an account of this interesting bird. Between the strips of high ground I have mentioned and the river itself is a low swampy region, often flooded, and covered with *sayus*-trees, interspersed with beds of aquatic shrubs, canes, and reeds. Though there is here in summer a tropical profusion of splendid flowers, the sombre foliage of the trees, and sere withering color of the reeds, give it a peculiarly sad and desolate appearance. This *sayus*-swamp is a great breeding place for the Carranchos (*Polybori*) and other Hawks, of which there are great numbers of all the species known in this country. But in this region I have met with a very few species of the small birds found on the pampas. This part of its fauna, like its vegetation, being derived from the north, differs from that of the adjacent country. All such species as are found exclusively in the riverine forest which I have described may be considered as reaching the extreme southern limit of their geographical range at about one degree south of the city of Buenos Ayres. I will now tell you what I have learned of some of these, and will mention others in future."

Genus IBYCTER Vieill.

Type.

Ibycter, Vieill. Analyse, p. 22 (1816); Sharpe, Cat. Bds.

Brit. Mus. i. p. 34 (1874); Sharpe, Hand-list Bds.

i. p. 244 (pt.) (1899) *I. americanus*.

Daptrius, Vieill. Analyse, p. 22 (1816) *I. ater*.

Gymnops, Spix. Av. Bras. i. p. 11 (1824) *I. ater*.

Phalcobænus, Lafr. in D'Orb. Dict. iii. p. 151 (1843) *I. megalopterus*.

Senex, J. E. Gray in Jard. & Selby, Ill. Orn. n. S. pl.

24 (1893) *I. australis*.

Ætriorchis, Kaup, Classif. Säug. u. Vög. p. 124 (1844). *I. australis*.

Helotriorchis, Reich. Av. Syst. Nat. pl. xcvi (1850) *I. australis*.

Geographical Range.—From Guatemala and Honduras southward, throughout all South America to the Straits of Magellan, Tierra del Fuego, Cape Horn and the Falkland Islands.

IBYCTER MEGALOPTERUS (Meyen).

Aquila megaloptera, Meyen, Beitr. p. 64, pl. 7 (1834).

Phalcobænus montanus, D'Orb. Voy. Amer. Mérid. Oiseaux, p. 51, pl. 2 (1835).

Milvago montanus, Darw. Voy. Beagle, Birds, p. 13 (1841).

Milvago megalopterus, Darw. *t. c.* pp. 13, 21; Lane, Ibis, 1887, p. 182 (Sacaya, Cancosa to 6,000 feet).

Polyborus megalopterus, Cab. & Tschudi, Faun. Peruana, pp. 16, 78 (1845).

Caracara montanus, Des Murs in Gay's Hist. Chil. Zool. I. p. 210 (1847).

Phalcobænus megalopterus, Bp. Consp. Av. I. p. 13 (1850); Hartl. Naum. 1853, p. 220 (Chili); Burm. Reise La Plata, II. p. 434 (1861: Tucuman).

Milvago crassirostris, Pelz. Sitz. Akad. Wien, xliv, p. 7 (1861); id. Reise Novara, Vög. pl. i (1865: Chili).

Ibycter megalopterus, Sharpe, Cat. B. Brit. Mus. I. p. 36 (1874); Burm. An. Mus. Nac. Buenos Aires, III. part XI, p. 315 (1890: Rio Chico, Patagonia); Sharpe, Hand-list B. I. p. 244 (1899).

FIG. 282.



Ibycter megalopterus. Immature female. P. U. O. C. 7891. Rio Gallegos, Patagonia, 26 May, 1896. J. B. Hatcher. About one-sixth natural size.

GENERAL DESCRIPTION.

Size.—Adult male.

Total length, about 21.50 inches.

Wing, 14.5 inches.

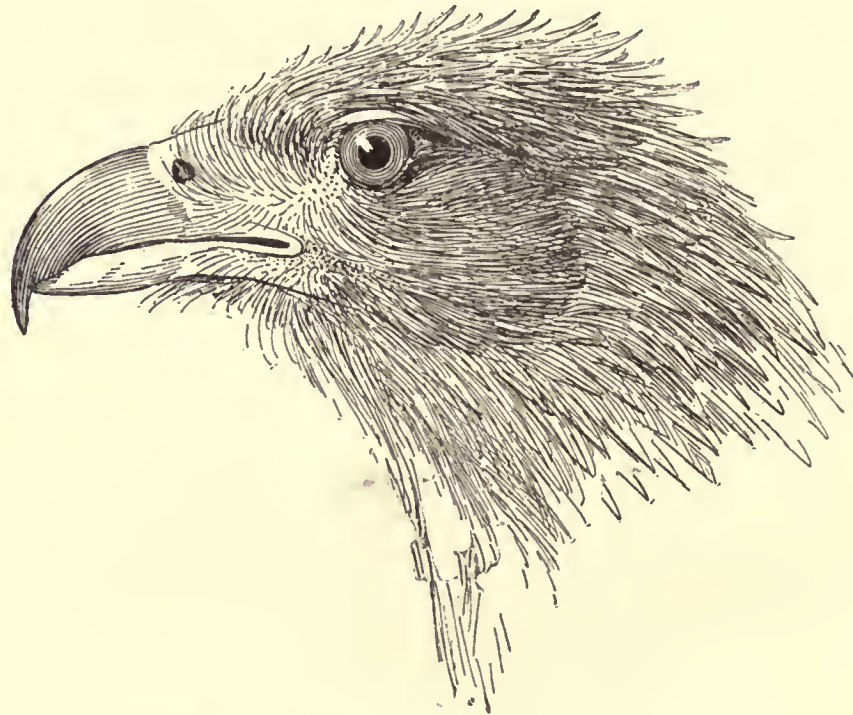
Culmen, 1.5 inches.

Tail, 8.2 inches.

Tarsus, 1.6 inches.

The sexes do not differ appreciably in color, but the female averages a little longer than the male.

FIG. 283.



Ibycter megalopterus. P. U. O. C. 7891. Natural size.

Color.—Adult male.

General color: Glossy black, with deep, dull green reflections above and below, except on the rump and abdomen, which are pure white.

Head: Crested with recurved feathers on the crown; entirely glossy black, green reflections.

Neck: Glossy black like the head.

Back: Interscapular region, back and rump, glossy black with a strong tinge or reflection of deep green; the upper tail-coverts immaculate white.

Tail: Black; white at the base and a broad tip of white on each feather.

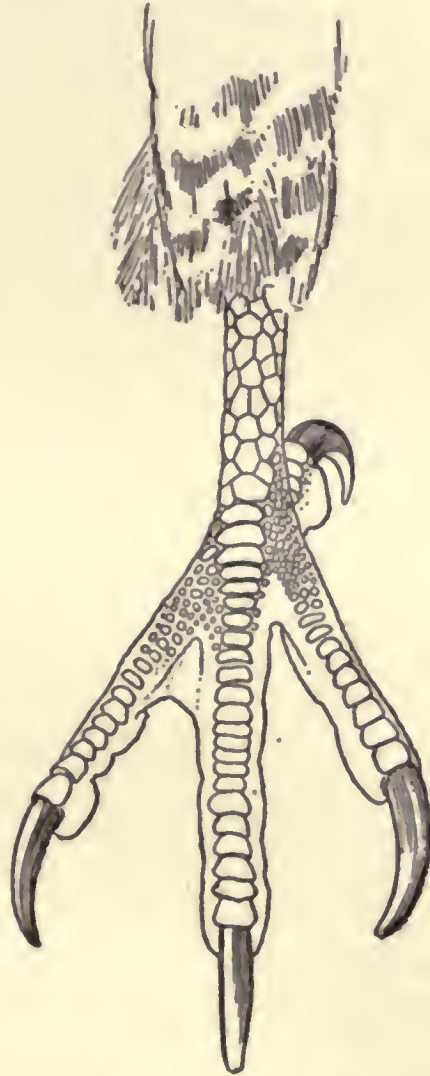
Wings: Primaries black, each quill tipped with white; secondaries black, shaded with deep brown and generally tipped with white; scapulars and upper wing-coverts black like the back; under wing-coverts white, as are some of the feathers at the bend of the wing; axillaries white.

Lower parts: Chest and breast black; flanks white with some admixture of black feathers; abdomen, thighs and under tail-coverts white.

Bill: Yellow, except at the base of both upper and lower mandible, which is dull horn-blue. Cere and bare skin about the eye, bright yellow.

Iris: Deep hazel-brown.

FIG. 284.



Ibycter megalopterus. P. U. O. C. 7891. Right foot. Natural size.

Feet: Yellow, or yellow with brownish wash.

Immature birds, and young of the year (see Figs. 285 and 286.)

Head: Brown, with a strong cinnamon tinge, each feather tipped with yel-

lowish buff; the feathers of the crest are pointed, slightly elongated and recurved, but not so conspicuously as in the adults.

Neck: Like the head, but not so reddish; the buffy shade prevailing over the brown on the chin and upper throat.

Back: Interscapular region, back and rump brown, strongly tinged with cinnamon or reddish, each feather with a yellowish buff tip; this is most emphasized on the interscapular region and is not so defined on the lower back and rump; the upper tail-coverts are very long, creamy white in color and barred rather obscurely with brown of the prevailing tone.

Tail: Dull brown with a reddish tone; the inner webs of the feathers dull buffy yellow, lighter toward the tips; a distinct terminal band of buffy whitish.

Wings: Primaries and primary coverts dark brown, greyish on the outer margin of the primaries; the inner webs of both sets of feathers white or whitish, which is less conspicuous on the outer webs, the outer web margined and the inner spotted with brownish; the rest of the wing-coverts dull brown, with little or no admixture of the buffy shading prevailing elsewhere; under wing-coverts brown, with dull buffy tips and shading.

Lower parts: More uniform dull brown, with a deep cinnamon shade, the lower abdomen and thighs paler and often yellowish with brown markings terminally; the under tail-coverts pale yellowish brown, almost cream-color.

Immature birds seem to average somewhat larger than do adults; length 22.00; wing 15.50; tail 9.0 inches. No notes as to the color of the bill, feet or naked parts were made by the naturalists who collected for Princeton.

Geographical Range.—Pacific slope of the Andes in Bolivia, Peru and Chili; southeastern Patagonia, Rio Gallegos, and region about Cape Fairweather, Patagonia; headwaters Rio Deseado, Arroyo Eke = Arroyo Gio, Hatcher's Map; Rio Chico [de Santa Cruz, the upper waters?], Patagonia (Burmeister).

Mr. Hatcher in 1896 procured two immature birds of this species on the Rio Gallegos, in southeastern Patagonia; and again in 1898 Mr. Colburn, working under Mr. Hatcher's direction, secured an immature female at a point called Arroyo Eke, at the headwaters of the Rio Deseado, far to the north and at the base of the foothills of the Cordillera. The first two birds were taken on the 26th and 29th of May, and Mr. Colburn's specimen on

the 24th of April. Burmeister's records from Rio Chico [de Santa Cruz?], Patagonia, would be close to where Mr. Colburn collected his single bird. This has generally been considered as a bird of the higher altitudes of the Cordillera in Peru and Chili; the extension of its known range to the southeastern coast of Patagonia is therefore of notable interest. There are no adults among the birds procured by the Princeton Expeditions.

IBYCTER ALBOGULARIS (Gould).

Polyborus (Phalcobænus) albogularis, Gould, P. Z. S. 1837, p. 9 (Santa Cruz, Patagonia).

FIG. 285.



Ibycter albogularis. Adult male. P. U. O. C. 8304. About one-sixth natural size.

Milvago albogularis, Darw. Voy. Beagle, Birds, pp. 13, 18, pl. I. (1841: Santa Cruz, April); Scl. Ibis, 1861, p. 23 (Patagonia); id. & Salv. Nomencl. Av. Neotr. p. 122 (1873); Burm. An. Mus. Nac. Buenos Aires, III. part X. p. 241 (1888), part XI. p. 315 (1880: Santa Cruz). *Ibycter albigularis*, Sharpe, Cat. B. Brit. Mus. I. p. 37 (1874); Oust. Miss. Scient. Cap Horn. Oiseaux, pp. 250, 324 (1891: Rio Gallegos, June); Sharpe, Hand-list B. I. p. 244 (1899); Martens, Hamb. Magalh. Sammelr. p. 5 (1900: Patagonia).

GENERAL DESCRIPTION:

Size.—Adult male. P. U. O. C. 8304. Arroyo Eke, Patagonia, 24 April, 1898, A. E. Colburn, collector. Or. No. 348.

Total length, 20.75 inches.

Wing, 15.25 inches.

Culmen (from cere to tip), 1.25 inches.

Tail, 8.85 inches.

Tarsus, 2.90 inches.

Females average, when adult, a little larger than the males and there is a notable variation individually without regard to sex.

FIG. 286.



Ibycter albogularis. P. U. O. C. 8304. Natural size.

Color.—Adult male. P. U. O. C. 7955. Arroyo Eke, Patagonia, 26 April, 1898, A. E. Colburn, collector. Or. No. 350.

Head: Forehead white, narrowest in the center and widening into a more or less definite spot on the sides. Crown and sides of face and head glossy black. Bare region in front and below eye, as well as on lower mandible, with black hairs. The feathers of the crown and occiput lanceolate, but not much elongated and only slightly recurved.

Neck: Above and on the sides concolor with the crown and occiput and with an undertone of deep rich brown. Chin, throat and lower neck pure white, abruptly defined against the black areas and head and neck.

Back: Upper and lower back shining black, with an undertone of deep, rich brown; rump and upper tail pure white. In some adults this is more or less spotted with chocolate, but in most cases the rump-patch is immaculate.

Tail: White at base, where the shafts of the rectrices are ivory-white; then a black region six inches or more in extent toward the terminal pure white band an inch and a half broad, the rectrices here having white shafts; the feathers of the tail are generally so worn terminally (even in newly-moulted birds), by the terrestrial feeding habits of the species as to make this terminal white band appear much narrower. The tail from below presents much the same pattern, but is duller, so far as the black region is concerned.

Wings: Black, with the prevailing undertone of deep, rich brown. Primaries white at the base, the outer vanes wholly black with brown shade; the inner vanes barred black and white for the basal third, then wholly black or brown tone, till at the end they are tipped definitely with white on the first three quills, the others having very obscure edging of white at tips. Secondaries barred on their inner vanes black and white basally, then black, with deep brown undertone, and all broadly tipped with pure white. Rest of the upper surface of the wing black like the back; the white feathers at the bend of the wing in the ulnar-radial region extend slightly on the upper surface, so as to be conspicuous when the wing is closed.

Lower parts: Immaculate pure white throughout, including the under wing-coverts and axillaries; most adult birds have a few black or dark feathers showing as bars on the thighs, but this marking is not always present.

Bill: "base of bill yellow" (J. B. Hatcher). The bill is yellow, with blue shadings near the cere. Cere "yellow" (Charles Darwin).

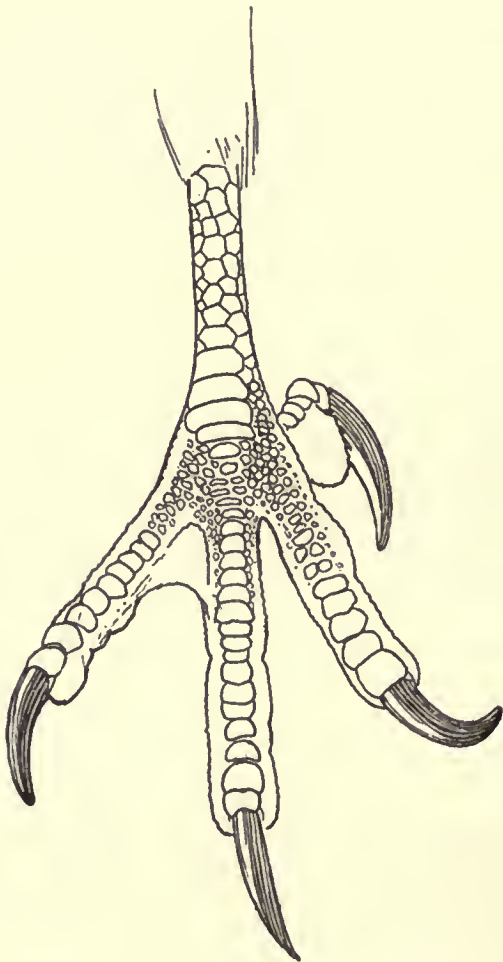
Feet: "Yellow" (Charles Darwin, from type).

Iris: Hazel. Hazel-brown (J. B. Hatcher).

"Une femelle de cette espèce a été tuée par M. Lebrun le 16 juin 1883 sur les bords du Rio Gallegos. Elle avait les yeux d'un jaune foncé et la cire d'un jaune orange. Au contraire, le type de l'*Ibycter albigularis*

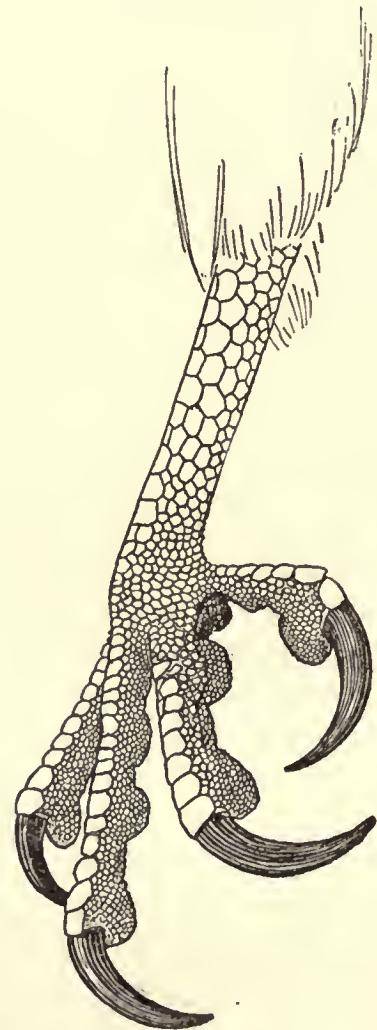
qui avait été obtenu sur les bords du Santa Cruz, par 50° de latitude Sud, a été représenté avec les yeux bruns, la cire et les pattes d'un jaune gomme-gutte." (Mission Scientifique du Cap Horn, Zoologie, p. 231, 1891.)

FIG. 287.



Ibycter albogularis. P. U. O. C. 8304. Right foot from front. Natural size.

FIG. 288.



Ibycter albogularis. P. U. O. C. 8304. Foot from the side. Natural size.

So far as is known, the immature or young birds of this species have not been observed or collected.

Geographical Range.—Southern Patagonia; Rio Gallegos, Rio Santa Cruz, headwaters Rio Deseado, Arroyo Eke = Arroyo Gio of Map.

For many years, from the 20th of April, 1834, till the 16th of June, 1883 (when M. Lebrun obtained a single bird on the Rio Gallegos) the type collected by Darwin was the sole representative of this bird in any collection. Both of these birds are adult and each is referred to below.

The Naturalists of the Princeton Expeditions were so fortunate as to discover localities where this must now be considered as at least a common bird. In late May and during early June, 1896, Mr. Hatcher secured specimens in the region about Rio Gallegos; where M. Lebrun collected his single bird in June, 1883. The particular points in this territory where a stay was made at this time were Killik Aike and Guer Aike, both near the mouth of the Rio Gallegos; Killik Aike on the estuary and Guer Aike on the river proper, some sixty miles from the coast.

Mr. Hatcher writes in the Narrative: "There are three species of carrion hawks in southern Patagonia. These pertain to three different genera, *Polyborus tharus*, *Ibycter albigularis*, and *Milvago chimango*. [An additional species *Ibycter megalopterus* also occurs.—W. E. D. S.] I could not detect that they had any distinguishing names for the different species, which, though of almost identical habits, were so unlike in color. Although frequently seen mingled together and feeding from the same carcass, it can not be said that such social relations were entirely harmonious, since they indulged almost continuously in most spirited personal conflicts, though I cannot assert that such engagements were any less frequent between individuals of the same species than between those belonging to different species." (Narrative, Princeton Exped. p. 57, 1903. Hatcher.)

From the foregoing the conclusion must be drawn that *Ibycter albigularis* was about as common as the rest of the carrion hawks which abounded in this region, even though no large series of the birds was collected. And the economy of the species, as would be expected, is so like that of its congeners as to lead to no comment. Of its breeding habits thus far we know nothing, and its several phases of plumage, correlating with age, for there are such plumages without doubt, have still to be studied by future field workers.

Mr. A. E. Colburn was conducting the work of the Princeton Expeditions during the season of 1898 at a point on the headwaters of the Rio Deseado, known as Arroyo Eke and later placed on the Hatcher map as Arroyo Gio. During the last days of April the bird in question was

common here and Mr. Colburn obtained a series of four individuals, both sexes being represented. All these additional birds, as well as a large number seen, *were in adult plumage*.

Arroyo Gio is over two hundred miles north of the Rio Gallegos country and west of it; from the coast it is distant more than a hundred and twenty miles in the foothills of the Cordillera; these carrion hawks, heretofore almost unknown, have a circumscribed distribution, so far as ascertained, but are common where they occur.

There is reason to believe that the immature plumage of *Ibycter albogularis* closely resembles that of *Ibycter megalopterus*, but as this is as yet hypothetical, the younger representatives of the species must remain for the present undescribed.

Darwin has to say of the type collected by him at Santa Cruz in April, 1845: "Mr. Gould, at the time of describing this species, entertained some doubts whether it might not eventually prove to be the *Phalcobænus montanus* of D'Orbigny [= *I. megalopterus*], in a state of change. I have carefully compared it with the description of the *P. montanus*, and certainly, with the exception of the one great difference of *M. albogularis* having a white breast, whilst that part in the *P. montanus* is black, the points of resemblance are numerous and exceedingly close. The *M. albogularis*, appears to be rather larger, and the proportional lengths of the wing feathers are slightly different; the cere and tarsi are not of so bright a colour; the middle toe has fifteen scales on it instead of having sixteen or seventeen. The black shades of the upper surface are pitchy, instead of having an obscure metallic gloss, and the feathers of the shoulders are terminated with brown, so as to form a collar, which is not represented in the figure of *P. montanus*, given by M. D'Orbigny. Although the main difference between the two birds is the colour of their breasts, yet it must be observed, that in the *M. albogularis* there is some indication of an incipient change from white to brown in the plumage of that part. But as M. D'Orbigny, who was acquainted with the young birds of *P. montanus* (of which he has given a figure), does not mention so remarkable a modification in its plumage, as must take place on the supposition of *M. albogularis* being an immature bird of that species; and as the geographical range of the two is so very different, I am induced to consider them distinct. Moreover, on the plains of Santa Cruz, I saw several birds, and they appeared to me similar in their colour-

ing. The *M. albogularis* is remarkable from the confined locality which it appears to frequent. A few pair were seen during the ascent of the river Santa Cruz (Lat. 50° S.) to the Cordillera; but not one individual was observed in any other part of Patagonia. They appeared to me to resemble, in their gait and manner of flight, the *P. Brasiliensis*; but they were rather wilder. They lived in pairs, and generally were near the river. One day I observed a couple standing with the Carranchas and *M. pezoporus*, at a short distance from the carcass of a guanaco, on which the condors had commenced an attack. These peculiarities of habit are described by M. D'Orbigny in almost the same words, as occurring with *P. montanus*; both birds frequent desert countries; the *P. montanus*, however, haunts the great mountains of Bolivia, and this species, the open plains of Patagonia.

"In the valleys north of 30° in Chile, I saw several pair, either of this species or of the *P. montanus* of D'Orbigny (if, as is probable, they are different) or of some third kind. From the circumstance of its not extending (as I believe) so far south even as the valley of Coquimbo, it is extremely improbable that it should be the *M. albogularis*—an inhabitant of a plain country twenty degrees further south. On the other hand, the *P. montanus* lives at a great elevation on the mountains of Upper Peru; and therefore it is probable that it might be found in a higher latitude, but at a less elevation. M. D'Orbigny says, 'Elle aime les terrains secs et dépourvus de grands végétaux, qui lui seraient inutiles; car il nous est prouvé qu'elle ne se perche pas sur les branches.' In another part he adds, 'Elle descend cependant quelquefois jùsque pres de la mer, sur la côte du Péru, mais ce n'est que pour peu de temps, et peut-être afin d'y chercher momentanément une nourriture qui lui manque dans son séjour habituel; peut-être aussi la nature du sol l'y attire-t-elle; car elle y trouve les terrains arides qui lui sont propres.'¹ This is so entirely the character of the northern part of Chile, that it appears to me extremely probable, that the *P. montanus*, which inhabit the great mountains of Bolivia, descend in northern Chile, to near the shores of the Pacific; but that further south, and on the opposite side of the Cordillera, it is replaced by an allied species—the *M. albogularis* of Santa Cruz." (Darwin, Voy. Beagle, Birds, pp. 19–21. 1841.)

¹ Voyage dans l'Amerique Meridionale, Partie, Oiseaux, p. 52.

IBYCTER CIRCUMCINCTUS Scott.

Ibycter circumcinctus Scott, Auk, XXVII, p. 152, 1910.

Type.—Princeton University Collection, 8993. Adult male. Chubut, Patagonia, February, 1896. Collected by the Museo de la Plata. (Original Number 8; exchange with Princeton University.)

Size.—Male cited.

Total length, about 24 inches.

Wing, 16.25 inches.

Culmen, from in front of cere, 1.30. Cere at forehead, 0.40.

Tail, 10.30 inches.

Tarsus, 2.55 inches.

Color.—General color: Black and white. Black preponderating above; white prevailing below.

Head: Black with lanceolate feathers, prolonged on the occiput into a decided occipital crest; undershading throughout deep brown.

Neck: Black above and on the sides, with deep brown undershade. Chin and upper neck below pure white; this is divided from the white lower neck by a black band, more or less variegated with white markings on some of the feathers; this band is an inch and a half wide. Lower neck white, with the black of the sides confining it to a narrow strip, which widens on the upper breast.

Back: Mantle and lower back black with a dull green gloss and under-shade of deep brown. Rump and upper tail-coverts pure white.

Tail: The base definitely white, the rectrices here having ivory-white shafts; thence black prevails for six inches and the shafts of the rectrices are shining black; a terminal pure white band about an inch and a half broad, and here the shafts of the rectrices are again ivory-white. Below, the tail is duller, but presents the same pattern.

Wings: Above black, with a dull brown undertone, obscure and green reflections; the quills black, both the primaries and secondaries tipped with white. Small plumes along bend of wing conspicuously white, when wing is closed; the feathers of the border of the shoulders first white, then chiefly black, with an admixture of white, and finally wholly black.

Under parts: The chin and throat white, separated from the white of the breast by a broad black band, somewhat variegated with white markings, irregular in shape and size, on some of the feathers. The white on the lower throat is confined to a narrow strip in the center, bounded by

black, connected with the neck-band on the sides; the white area widens to three inches on the upper breast, the black border extending well down and defining the upper abdomen. The rest of the under surface, including the lower tail-coverts, the axillaries and under wing-coverts, pure white.

Feet and tarsus deep yellow; the soles shaded with dull brown.

Iris hazel-brown.

Bill deep yellow, with a shading of blue close to the cere. Cere and naked skin of forehead and lower mandibles orange, with a strong shading of carmine.

Geographical Range.—Province of Chubut, Patagonia.

This carrion hawk, apparently heretofore undescribed, was received in an exchange of bird-skins from the Museo La Plata; the bird is undoubtedly fully adult, is a male, and was collected in Chubut in February, 1896. It was catalogued in the collection of birds referred to above as No. 8 and labelled *Ibycter americanus*, but evidently is from a region where that species has not been obtained, and is thrown out of the *americanus* group by the difference of the coloring of the underparts and of the tail. *Ibycter megalopterus* has not been referred thus far to the territory in which this seemingly new bird was collected; nor does the coloring of the under parts seem to warrant the possibility that this is an unknown plumage of *megalopterus*. The conspicuous necklace of black crossing the pure white of the neck of this bird distinguishes it at once, in the adult plumage, from any of its allies.¹

IBYCTER AUSTRALIS (Gmelin).

Statenland Eagle, Lath. Gen. Syn. I. p. 40 (1781).

Falco australis, Gm. Syst. Nat. I. p. 259 (1788: ex Lath.).

Morphuus novæ-zealandiæ, Cuv. Règn. Anim. I. p. 318 (1817).

Falco novæ-zealandiæ, Temm. Pl. Col. I. pls. 192, 224 (1823).

Polyborus novæ-zealandiæ, Vig. Zool. Journ. I. p. 336 (1824); Darw. Journ. Voy. Advent. & Beagle, p. 66 (1829); id. Natural. Voy. Beagle, p. 57 (1882: Falkland Islands).

Caracara novæ-zealandiæ, Less. Voy. Coq. Zool. I. p. 615 (1826: Falkland Islands).

¹ While it is impossible to decide positively upon the status of this species, I strongly suspect that it will prove to be nothing more than *I. albogularis*, with remains of the immature plumage on the neck and breast.—*Witmer Stone*.

- Circaëtus novæ-zealandiæ*, Cuv. Règn. Anim. I. p. 328 (1829).
Circaëtus antarcticus, Less. Traité d'Orn. p. 49 (1831: Falkland Islands & Tierra del Fuego).
Senex australis, J. E. Gray, in Jard. & Selb. Illustr. Orn. pl. 24 (1839); Gurney, List Diurn. B. Prey, p. 12 (1884); Salvad. Ann. Mus. Genov. (2) xx, p. 613 (1900: Penguin Rookery; Porto Cook, March).
Milvago leucurus, Gould, Voy. Beagle, Birds, p. 15 (1841: Falkland Islands, March); id. P. Z. S. 1859, p. 93.
Ætriorchis novæ-zealandiæ, Kaup, Classif. Säugeth. ii. Vög. p. 124 (1844).
Caracara leucurus, Des Murs in Gay's Hist. Chil. Zool. I. p. 213 (1847).
Milvago australis, Gray, Cat. Accipitr. Brit. Mus. p. 30 (1848); Abbott, Ibis, 1861, p. 150 (East Falklands, resident, breeds in Nov.); Scl. & Salv. Nomencl. Av. Neotr. p. 122 (1873); iid. P. Z. S. 1879, p. 309 (Falkland Islands); iid. Voy. Chall. II. Birds, p. 150 (1881; eggs); Burm. An. Mus. Nac. Buenos Aires, iii, part x, p. 241 (1888: Falkland Islands).
Ibycter australis, Kaup, Arch. fur Nat. 1850, p. 41; Sharpe, Cat. B. Brit. Mus. I. p. 38 (1874); Oust. Miss. Scient. Cap Horn, Oiseaux, pp. 14, 324 (1891: Falkland Islands); Sharpe, Hand-list B. I. p. 244 (1899); Martens, Hamb. Magalh. Sammelr. p. 5 (1900: Falklands).
Polyborus australis, Bp. Consp. Av. I. p. 13 (1850); Cass. U. S. Expl. Exped. p. 101 (1858: Orange Harbour, Tierra del Fuego); Schl. Mus. Pays Bas, Polybori, p. 3 (1862: Falkland Islands).
Ætriorchis australis, Bonap. Rev. et Mag. de Zool. 1854, p. 11.

GENERAL DESCRIPTION.

Size.—Adult male.

Total length, about 25.00 inches.

Wing, 16.65 inches.

Culmen, 2.0 inches.

Tail, 11.0 inches.

Tarsus, 3.35 inches.

Color.—Adult male.

General color: Black, with lanceolate streaks and white spots on the feathers, at different points.

Head: Black; the feathers of the occiput forming a crest.

Neck: Black; the throat, the nape and hind neck decorated with white, lanceolate streaks on the feathers.

Back: Entirely black, save a few of the outer upper tail-coverts, which are streaked with lanceolate, white markings.

Tail: Black; each feather broadly tipped with white, the whole making a conspicuous, terminal white band.

Wings: Primaries and secondaries very dark brown, nearly black and slightly tipped with ashy white. Rest of the wing black.

Lower parts: Black; the breast with lanceolate white markings like those of the throat, which become on the abdomen tiny, apical, roundish spots on each feather; inner face of the thighs and the feathers about the vent, tawny brown; the under tail-coverts blackish, with narrow white margins.

Bill: Yellow, becoming blue horn-color at the base.

Iris: Dark hazel-brown. Bare skin of face and cere yellow; bare crop-patch yellow.

Feet: Yellow, obscured more or less with brown.

Immature birds and young of the year.—Head: Deep, smoky brown; the feathers of the crown with buffy brown tips and the sides of the face shaded with yellowish brown.

Neck: Blackish brown above and on the nape, where the feathers have buffy brown tips; the brown of the nape and back of the neck shading into yellowish brown on the sides of the neck and beneath.

Back: Dull, smoky brown, except the upper tail-coverts, which are lighter yellowish brown.

Tail: Yellowish brown, much like the upper coverts in tone; the external margins of the feathers shading into darker brown.

Wings: Primaries clear, yellowish ocher at base, becoming dull, smoky brown at their exposed surface, when the wing is closed, and so matching the back; the rest of the wing dull, smoky brown.

Lower parts: Dull, smoky brown, with obsolete markings, spots in the center of each feather, of a reddish brown shade; this condition is plainest on the breast and more obscure on the abdomen, while the sides and flanks are immaculate, dull, smoky brown.

Bill: Horn-brown, with a yellowish tip to the lower mandible.

Iris: Brown. Cere and bare skin about the eye, slaty blue.

Feet: Feet and legs slaty blue.

Geographical Range.—Peculiar to the Falkland Islands.

Genus MILVAGO Spix.

Type.

- Milvago*, Spix, Av. Bras. i. p. 11 (1824); Sharpe, Hand-
List Bds. i. p. 244 (1899). *M. chimachima*.
Ibycter (part I., *Milvago*), Sharpe, Cat. Birds Brit. Mus.
i. p. 34 (1874) *M. chimachima*.

Geographical Range.—From Panama southward throughout South America to the Straits of Magellan, Tierra del Fuego and Cape Horn.

MILVAGO CHIMANGO (Vieillot).

- Chimango, Azara, Apunt. I. p. 47 (1802).
Polyborus chimango, Vieill. N. Dict. d'Hist. Nat. V. p. 260 (1816: ex Azara); D'Orb. Voy. Amer. Mèrid. p. 60, pl. 2, figs. 3, 4 (1835: Patagonia); Schl. Mus. Pays Bas, Polibori, p. 6 (1862: Chili); Darw. Natural. Voy. Beagle, p. 57 (1882: Patagonia); Phil. Ornith., IV. p. 158 (1886: Quebrada encantada).
Haliæetus chimango, Less. Traité d'Orn. p. 43 (1831: Montevideo).
Aquila pezopora, Meyen, Beitr. p. 62, pl. 6 (1834: Chili).
Milvago pezoporus, Darw. Voy. Beagle, Birds, p. 13 (1841: Port Desire); Fraser, P. Z. S. 1843, p. 109 (Chili, common); Burm. La Plata Reise, II. p. 434 (1861: Banda Oriental; Mendoza); Burm. An. Mus. Nac. Buenos Aires, III. part X. p. 241 (1888: throughout Patagonia); Carbajal, La Patagonia, part II. pp. 256, 257 (1900).
Milvago chimango, Darw. Voy. Beagle, Birds, p. 14 (1841: Maldonado; La Plata); Hartl. Ind. Azara, p. 1 (1847): id. Naum. 1853, pp. 209; 220; Cass. U. S. Expl. Exped. p. 99 (1858: Rio Negro, Patagonia), Cab. Reis. Novara, Vög. p. 6 (1865: Chili); Scl. & Salv. Ibis, 1868, p. 187 (Sandy Point, Dec.), P. Z. S. 1868, p. 143 (Conchitas, resident); Huds. P. Z. S. 1872, p. 536 (Rio Negro, Patagonia); Scl. & Salv. Nomencl. Av. Neotr. p. 122 (1873); Durnf. Ibis, 1876, p. 161 (Buenos Aires), 1877, p. 40 (Chupat Valley, common), p. 188 (Buenos Aires, resident and numerous), 1878, p. 398 (Central Patagonia, resident); Scl. & Salv. P. Z. S. 1878, p. 435; Gibson, Ibis, 1879, p. 420 (Cape San Antonio, Buenos Aires, common resident, breeds Oct. and Nov.); Durnf. Ibis, 1880, pp. 416, 424, 429 (Tucuman, May and June); Scl. & Salv. Voy. Chall. II. Birds, p. 105 (1881: Puerto Bueno; Sandy Point); Doering, Expl. al Rio Negro,

Zool. p. 51 (1882); White, P. Z. S. 1882, p. 623 (Salta, Oct., breeding; Punta Lara, Feb.); Vincig. Boll. Soc. Geogr. Ital. (2) IX. p. 797 (1884); Gurney, List Diurn. B. Prey, p. 13 (1884); Barrows, Auk, I. p. 111 (1884: Lower Uruguay, abundant); Withington, Ibis, 1888, p. 470 (Lomas de Zamora); Scl. & Huds. Argent. Orn. II. p. 74 (1889); Ridgw. Proc. U. S. Nat. Mus. XII. p. 136 (1889: Laredo Bay); Holland, Ibis, 1890, p. 425 (Arg. rep.); Oust. Miss. Scient. Cap Horn, Oiseaux, pp. 15, 324 (1891: Orange Bay; New Years Sound, April); Frenzel, J. f. O. 1891, p. 115 (Córdoba); James, New List Chil. B. p. 7 (1892); Holland, Ibis, 1892, p. 204 (Estancia Espartilla, resident, breeds in Sept.); Hudson, Idle Days in Patagonia, p. 25 (1893); Aplin, Ibis, 1894, p. 196 (Uruguay); Lane, Ibis, 1897, p. 181 (Chili, everywhere common); Schalow, Zool. Jahrb. Suppl. IV. p. 692 (1898: Coquimbo, Nov.; La Serena, Dec.); Gosse in Fitzgerald Highest Andes, App. c. p. 343 (1899: Mendoza, common; Horcones Valley up to 13,000 feet); Sharpe, Hand-list B. I. p. 244 (1899); Salvad. Ann. Mus. Genov. (2) xx, p. 613 (1900: Punta Arenas, May; Isola Hoste, June); Albert, Contr. Estud. Aves Chil. II. p. 553 (1901).

FIG. 289.



Milvago chimango. P. U. O. C. 8675. About one-fourth natural size.

Caracara chimango, Des Murs in Gay's Hist. Chil. Zool. I. p. 211 (1847); Phil. & Sandb. Cat. Av. Chil. p. 3 (1868); Lataste, Actes, Soc. Scient. Chili, III. p. civ (1893: Nuble, foot of Cordilleras).

Ibycter chimango, Kaup, Arch. für Naturg. 1850, p. 41; Sharpe, Cat. B. Brit. Mus. I. p. 41 (1874); id. P. Z. S. 1881, p. 10 (Cockle Cove, Feb.; Talcahuano, Sept.); Carbajal, La Patagonia, Part II. p. 257 (1900); Martens, Hamb. Magalh. Sammelr. p. 5 (1900: Tier. d. Fuego).

GENERAL DESCRIPTION.

Size.—Adult male, P. U. O. C. 8675. La Plata, Argentina, April, 1895. Total length, about 17.25 inches.

Wing, 12.2 inches.

Culmen, 1.2 inches.

Tail, 7.6 inches.

Tarsus, 2.6 inches.

FIG. 290.



Milvago chimango. P. U. O. C. 8675. Detail of head. Natural size.

Color.—Adult.

General color.—Reddish brown, more or less shaded with ashy above and with whitish and cinnamon below; tail greyish, with a conspicuous sub-terminal band of deep seal-brown.

Head: Crown of characteristic lanceolate feathers, dull reddish brown, with median black streaks and shaded marginally and terminally with obscure ashy grey; forehead and a pronounced supraciliary stripe, reaching back to the ears, black or blackish; the cheeks and sides of the face with fine black lines, on a lighter, yellowish brown ground.

Neck: Reddish brown, the feathers shaded and decorated as on the crown; the chin and throat like the sides of the face, the throat even lighter.

Back: Interscapular region and lower back a duller, reddish brown, shaded terminally with ash; the rump brighter and distinctly barred with equally wide bands of reddish brown and whitish; the upper tail-coverts pure ivory-white.

FIG. 291.

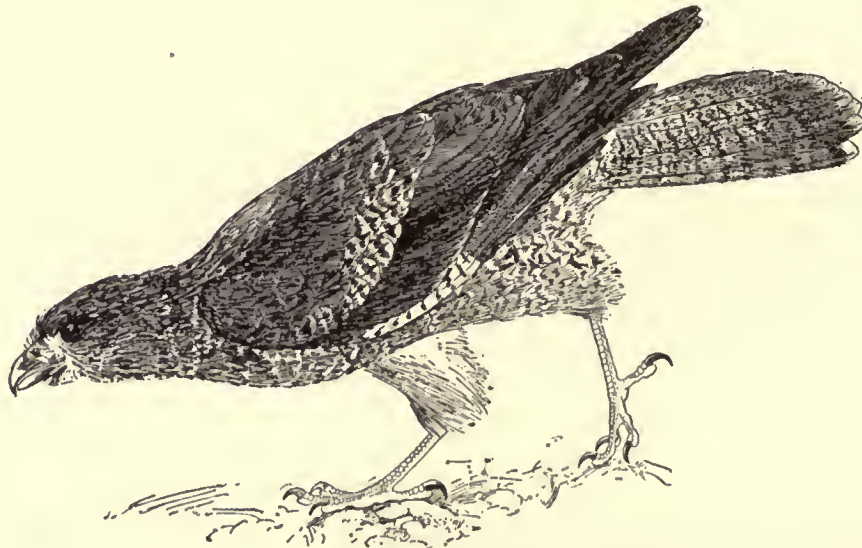


Milvago chimango. P. U. O. C. 8675. Detail of foot. Natural size.

Tail: Ashy grey, white at the base, with tiny flecks of brown on this ground-color; a broad sub-terminal band of deep seal-brown and a narrow white terminal bar, each feather being tipped with that color.

Wings: All the coverts like the interscapular region, reddish brown, with ashy tips to the feathers; the quills all brown of the same tone, shaded with ashy on their exposed surfaces; the primaries whitish at base and for two-thirds their length, this color obscured by minute flecking of dull brown; the shafts ivory-white; the primary coverts white and flecked to a less degree, and crossed by three indistinct brown lines, or narrow bands; the secondaries brown like the back, and, seen from above, very obscurely barred, or spotted irregularly with dull cinnamon; all the quills from beneath present a strong cinnamon tint on both vanes and this ground color is barred distinctly and rather narrowly with dark brown; under wing-coverts and axillaries cinnamon, barred with dark brown in narrow bars far apart.

FIG. 292.



Milvago chimango. P. U. O. C. 7887. Immature male. Punta Arenas, Chili, 3 January, 1898. One-fourth natural size.

Lower parts: More reddish brown than above; the feathers with pronounced ashy or whitish tips, the whole having a decidedly mottled character, the thighs inclining to pale cinnamon, and the under tail-coverts creamy white, sometimes washed with pale cinnamon.

Bill: Greenish yellow; the cere dull pinkish.

Iris: Varying shades from grey to hazel-brown.

Feet: Olive greenish, with a strong yellow tinge.

Immature birds and young of the year: Similar in general appearance

to adults; the general color is more pervaded by cinnamon, giving to the whole a redder shade; the region about the eye has no defined supraciliary stripe, but there is here the same shade that prevails on the crown; the back is deep brown, relieved by ashy edging to each feather; the rump and upper tail-coverts much as in the adult; the tail with no defined sub-terminal bar, but otherwise much as in old birds, not so light, however, and more coarsely freckled with dark brown. This is also true of the light portion of the primaries and of the primary coverts, and the bands across these are not distinct as in the adult; seen from beneath, the tail is obscurely barred with dark brown; the inferior surface of the wings is more strongly cinnamon than in adult birds and the dark bars on this ground show very distinctly; the lower parts are more pervaded with white and ashy shades and the browns are redder than in old birds; there is fairly distinct barring on the abdomen and flanks, cinnamon-brown markings on a dirty white ground; the thighs are strongly shaded with cinnamon and the under tail-coverts are creamy white.

Geographical Range.—The southern portion of South America; Tierra del Fuego and Patagonia; Chili, and north to 20° south latitude on the Pacific coast; in the interior of the country to about 24° south, but on the Atlantic coast appearing as far north in Eastern Brazil as the region immediately north of Rio de Janeiro.

On all the journeys which the Princeton naturalists made in Patagonia they encountered this smallest of the carrion hawks, and while it does not appear on the whole to be as numerous as its large congeners, it is a decided feature in the Patagonian bird fauna.

The birds nest in trees and the breeding season begins in the northern range of the species as early as late September, while in Patagonia the nesting time occurs throughout November. The birds appear to be resident throughout their range, there being abundant records of their occurrence at all points during every season of the year.

Sharpe (P. Z. S. 1881, p. 10) gives the following color notes: "Male: Cockle Cove, February 9, 1879. Legs olive-green, claws black; irides dark grey; cere grey.

"Male: Talcahuano, September, 1879. Eyes light brown; legs grey; bill grey and white."

M. J. Nicoll (Ibis, Jan., 1904, pp. 44-45) says:

"Iris black; bill, tarsi, and toes greenish yellow."

O. V. Aplin (Ibis, 1894, p. 196) says of this species in Uruguay:

"At Sta. Elena less common than the Carancho at all seasons, but more abundant in autumn than in spring and summer. At the Rio Negro they were more common. Some were remarkably tame; a pair at Sta. Florencia might be seen any morning on the quinta fence, and I saw a pair sitting on the posts of the corrál at a puesto on Sta. Elena, quite indifferent to the barking of several dogs which came out at us."

M. J. Nicoll found it fairly abundant in Molineux Sound, where it frequented the water's edge. (Ibis, Jan. 1904, pp. 44-45.)

Subfamily ACCIPITRINÆ.

Sharpe, Cat. Bds. Brit. Mus. i. p. 46 (1874); Sharpe, Hand-list Bds. i. p. 244 (1899).

FIG. 293.



Head of *Circus hudsonius*; showing the facial ruff. The feathers are laid back to expose the external ear. Life size. Drawn from a bird just killed.

Genus CIRCUS Lacépède.

Type.

Circus, Lacép. Tableaux, Ois., 1799, p. 4; Sharpe, Cat. Bds. Brit. Mus. i. p. 50 (1874); Sharpe, Hand-list

Bds. i. p. 245 (1899). *C. æruginosus*.

Pygargus, Koch, Syst. Baier. Zool. p. 127 (1816). *C. cyaneus*.

Strigiceps, Bp. Saggio Distr. Met. Anim. Vertebr. p. 37
(1831).

C. cyaneus.

Glaucopteryx, Kaup, Class. Säug. u. Vög. p. 113 (1844).

C. pygargus.

FIG. 294.



Circus hudsonius. Detail of foot. From bird just killed. Natural size.

Spizacircus, Kaup, Mus. Senckenb. iii. p. 258 (1845)

C. buffoni.

Spilocircus, Kaup, Isis, 1847, p. 89.

C. assimilis.

Pterocircus, Kaup, Arch. f. Naturg. xvi. p. 32 (1850).

C. pygargus.

Geographical Range.—The greater portions of both the Eastern and Western Hemispheres; parts of Australia; the genus *Circus* however is not represented throughout the area defined, but seems local and there are wide gaps and breaks in the continuity of distribution.

CIRCUS CINEREUS Vieillot.

Gavilan del campo ceniciento, Azara, Apunt. I. p. 145 (1802).

Gavilan del campo pardo, Azara, t. c. p. 151.

Circus cinereus, Vieill. N. Dict. d'Hist. Nat. IV. p. 454 (1816: ex Azara, p. 145); D'Orb. Voy. Amer. Mérid. Ois. p. 110 (1835: Patagonia and Falkland Islands); Darw. Voy. Beagle, Birds, p. 30 (1841: Falkland Islands); Fraser, P. Z. S. 1843, p. 109 (Chili); Hartl. Ind. Azara, p. 3 (1847); Des Murs in Gay's Hist. Chil. Zool. I. p. 227 (1847); Gould, P. Z. S. 1859, p. 94 (Falkland Islands); Scl. P. Z. S. 1860, p. 384 (loc. cit.); Abbott, Ibis, 1861, p. 152 (East Falkland Islands, resident); Burm. Reis. La Plata, II. p. 439 (1861: Rosario); Schl. Mus. Pays Bas, II. Circi, p. 5 (1862: Falkland Islands); Pelz. Reis. Novara, Vög. p. 13 (1865: Chili); Scl. & Salv. P. Z. S. 1868, p. 143 (Conchitas); Phil. & Landb. Cat. Av. Chil. p. 5 (1868); Huds. P. Z. S. 1872, p. 536 (Rio Negro); Scl. & Salv. Nomencl. Av. Neotr. p. 118 (1873); Lee, Ibis, 1873, p. 131 (Arg. Rep.); Sharpe, Cat. B. Brit. Mus. I. p. 56 (1874: Straits of Magellan); Durnf. Ibis, 1877, p. 38 (Chupat Valley), p. 187 (Buenos Aires, occasional); id. Ibis, 1878, p. 397 (Central Patagonia, breeds in Oct.); Gibson, Ibis, 1879, p. 411 (Cape San Antonio, not observed breeding); Durnf. Ibis, 1880, p. 423 (Tucuman, June); Sharpe, Cat. P. Z. S. 1881, p. 10 (Coquimbo, June); Doering, Expl. al Rio Negro, Zool. p. 49 (1882: Rio Negro & Rio Colorado); Salv. P. Z. S. 1883, p. 426 (Coquimbo); Gurney, List Diurn. B. Prey, p. 20 (1884); Barrows, Auk, I. p. 30 (1884: Bahia Blanca, Feb.; Ventana; Carhué); Burm. Ann. Mus. Nac. Buenos Aires, III, part X. p. 241 (1888: Patagonia), part XI. p. 316 (1890: Rio Chico del Chubut); Withington, Ibis, 1888, p. 469 (Lomas de Zamora, common, but not observed breeding); Scl. & Huds. Argent. Orn. II. p. 57 (1889: Patagonia; Falkland Islands); Holland. Ibis, 1890, p. 425 Estancia Espartilla, Oust. Miss. Scient. Cap Horn, Oiseaux, pp. 19, 324 (1891: Punta Arenas, Feb.); Frenzel, J. f. O. 1891, p. 114

(Córdoba); Holland, Ibis, 1891, pp. 16, 18; id. Ibis, 1892, p. 203 (Estancia Espartilla, resident); Schallow, Zool. Jahrb. Suppl. IV. p. 696 (1898); Sharpe, Hand-list, B. I. p. 245 (1899); Carbajal, La Patagonia, Part II. p. 256 (1900); Salvad. Ann. Mus. Genov. (2) xx, p. 614 (1900: Santa Cruz, Jan.; Rio Pescado, May); Martens, Hamb. Magalh. Sammelr. p. 5 (1900: Tierra del Fuego; Falkland Islands); Albert, Contr. Estud. Av. Chil. II. p. 503 (1901).

FIG. 295.



Circus cinereus. Adult male (in front) and female. One-fourth natural size.

Circus campestris, Vieill, N. Dict. d'Hist. Nat. IV. p. 455 (1816: ex Azara, p. 151)

Falco histrionicus, Quoy & Gaim. Voy. Uranie, Zool. pp. 93, 94, pls. 15, 16 (1824; Falklands).

Circus histrionicus, Less. Voy. Coq. Zool. I. p. 616 (1826: Falkland Islands); Vigors, Zool. Journ. III. p. 425, note (1827: Port Famine); Hartl. Naum. 1853, p. 220 (Chili).

Circus poliopterus, Cab. & Tschudi, Faun. Peruana, p. 113, pl. 3 (1845); Schl. Mus. Pays. Bas. II. Circi, p. 6 (1862: La Plata); Pelz, Reis. Novara, Vög. p. 13 (1865: Chili).

Spizacircus histrionicus, Kaup. Contr. Orn. 1850, p. 59.

Strigiceps histrionicus, Bp. Consp. Av. I. p. 35 (1850).

GENERAL DESCRIPTION.

Size.—Adult male. P. U. O. C. 7904. Near Coy Inlet, Patagonia, 2 November, 1896. J. B. Hatcher. Or. No. 238.

Total length, 19.00 inches.

Wing, 12.90 inches.

Culmen, to cere, 0.80; with cere, 1.25 inches.

Tail, 8.60 inches.

Tarsus, 2.75 inches.

Adult female, P. U. O. C. 7905. Near Coy Inlet, Patagonia, 2 November, 1896. J. B. Hatcher. Or. No. 236.

Total length, 21.80 inches. Wing, 14.60 inches. Tail, 9.75 inches.

Blue phases of plumage.

Color.—Adult male cited.

FIG. 296.



Circus cinereus. Head of adult male. P. U. O. C. 7904. Natural size.

General color above ashy blue, with white rump. Below, ashy blue on throat and breast, the remainder of the under parts barred deep cinnamon and white transversely; the bars about equal in width and very regular in disposal.

Head: Forehead inclined to whitish, which becomes definite in the loreal region; the white of the loreal region thickly covered with fine black hairs recurved backward. Remainder of the head ashy blue, with a faint whitish eyebrow-stripe, outlined externally with a narrow hair-line of black. A pronounced facial disk, or ruff, back of the ear-coverts, slaty blue in color.

Neck: Concolor with head; the shade of ashy blue varies somewhat and is lightest on the throat and on the ruffs back of the ear.

Back: Concolor with the head and hind neck; the upper tail-coverts white, forming a conspicuous patch; the upper tail-coverts have in some cases a sub-terminal bar of ashy blue.

Tail: From above when closed, appears to be frosted ashy blue, with a white terminal and a broader subterminal band of dark brown, almost black, heavily frosted with ashy blue. When spread, the two central rectrices alone are seen to be ashy blue with the marks described; the other rectrices have only part of the outer webs ashy blue, and that portion of the inner webs which is exposed when the tail is spread is the same color; the white terminal bar is present, as is the dark subterminal band. The rest of each tail-feather, both on the inner and outer webs, is white, more or less notched or barred and somewhat suffused with dusky and slaty blue. From below, the tail appears white, with a more or less perfect sub-terminal band of deep ash and bars or conspicuous notches, at least four in number, on the inner web of each feather.

Wing: The primaries are blackish, frosted on the exterior webs with ashy blue, concolor with the back; the concealed bases of these feathers are white on both webs, that color giving way to blackish on the outer webs almost at once, but pervading the inner webs for at least half the length of each quill; the shafts are black. The secondaries are more definitely ashy blue than the primaries, that color appearing on both webs, but white encroaches on the inner webs almost to the exclusion of the ashy blue and each feather has a broad subterminal band of blackish brown and is narrowly tipped with white. The rest of the wing, from above, is concolor with the back. White plumules show at the bend of the closed wing.

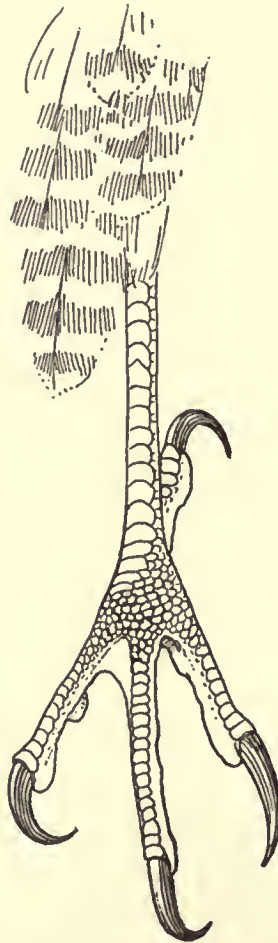
Lower parts: The chin and throat ashy blue, lighter in shade than is that color on the head; the breast ashy blue, evenly barred with white; this ends abruptly on the chest, where the feathers are barred evenly deep cinnamon and white, there being six to seven cinnamon bars crossing each feather; this pattern and color pervades the rest of the lower parts, the

thighs, feathered portion of the legs, and the under tail-coverts; the axillaries are much the same in marking, but the cinnamon bars are somewhat shaded with ashy blue; this is also true of the cinnamon barring on the sides beneath the wing; the lower wing-coverts are white.

Bill: Dark horn-brown, with blue undertone; dull greenish blue.

Iris: Pale lemon-yellow.

FIG. 297.



Circus cinereus. Adult male. P. U. O. C. 7904. Detail of foot from front.

Feet: Bright orange yellow.

Adult male (the first breeding plumage).—P. U. O. C. 8310. Rio Chico de Santa Cruz, Patagonia, 15 March, 1898. A. E. Colburn, collect. Or. No. 306. Resembles the full adult described.

Head: Forehead and lores white. Crown deep seal-brown, suffused with slaty or smoke color and with cinnamon tints showing through.

Eyebrow and face below the eye whitish; ear-coverts slaty blue, but somewhat shaded with brown; facial ruff slaty blue.

Neck: Above and on the sides slaty blue, but shaded with brown. The chin slaty blue, the center of each feather darker, giving a streaked appearance here. Lower neck and breast barred more or less definitely slate and white, but with a strong infusion of cinnamon in the slaty bars; these bars become definitely cinnamon on the lower breast.

Back: Deep slaty brown on upper back; each feather of the lower back and rump edged with pale cinnamon or rufous; the upper tail-coverts pure white, with arrow-shaped subterminal markings of dull cinnamon brown.

Tail: From above when closed, clear slaty blue, with six narrow bars, and a subterminal band of dull brownish black, much suffused by the frosting of slaty which prevails and ashy white tips terminating each feather; when spread, all but the two central rectrices are largely white, except on outer webs, and even here the lighter color is introduced somewhat on the second pair of rectrices and in increasing amount till on the outer pair there is little of the slaty blue terminally on the outer web. Each feather is barred with five sharply defined bars and has a broad, subterminal, dusky band, and a white tip. As the outer rectrices are reached, a strong cinnamon tint is developed, especially in the bars nearest the base of each feather and a cinnamon tone pervades the white areas to some extent; on the outer tail-feather four of the five bars are definitely cinnamon and on the second tail-feather three are the same color, while the subterminal band and the bar next it are not invaded by cinnamon on either of the two outer tail-feathers. From below, the tail is definitely white and the barring strong and distinct, dark, blackish brown, save on the outer feather, which is only notched with obsolete, dull brown. The subterminal band appears as a bar only a little wider than the others, when seen from below.

The wings are like those described, save that the upper coverts are all strongly margined narrowly with dirty white and now and then cinnamon invades these marginal markings to the exclusion of the lighter shade.

While, on the whole, this phase looks at a glance very like the mature adult male, the differences are constant and distinguish this age of the bird at once. It appears to be the first breeding plumage of the adult male and probably only obtains for one season.

Brown phases of plumage.—Adult female (cited above).

General color brown of varying shades, mottled with white and cinnamon and somewhat shaded with slaty above; barred transversely white and brown below.

Head: Forehead and loreal region white; recurved hairs on lores. Crown deep brown, the feathers narrowly edged with dirty white and with tinges of cinnamon. A supraciliary stripe of dirty white reaching from the white of the forehead to above the ear-coverts; this stripe is marked with fine hairlike dusky lines. Cheeks and ear-coverts deep brown like the crown and much streaked with buffy white and cinnamon. Facial ruff of dark brown feathers, bordered broadly with white, almost pure in tone. Occiput of white feathers, with heavy deep brown terminal markings almost obscuring the main feather-color.

Neck: Above and on the sides, much like the occiput in color and marking; the chin and upper throat buffy or dirty white, obscured by narrow, brown streaks; feathers of the lower throat brown of a chocolate shade, mottled and spotted with white.

Back: Deep brown, many of the feathers edged with buffy white and cinnamon, this character becoming more pronounced toward the rump; the upper tail-coverts white and in most individuals each feather has a small but distinct bright cinnamon spot near its tip, while the lateral ones are crossed by pale cinnamon bars.

Tail: When closed, from above, slaty blue, crossed by from five to seven narrow bars, and a broad subterminal band, all deep brown, each rectrix being tipped narrowly with white. When spread, the tail is almost like that of the immature male in blue plumage (p. 593) while seen from beneath, it is very similar to the above described phase of plumage.

Wings: The greater coverts slaty blue, broadly barred with deep brown; median and lesser coverts deep brown, with pale cinnamon or buffy white edges and spots, the whole having a mottled look, except on the shoulders, where the deep brown feathers are faintly edged with cinnamon; the scapulars are deep brown, barred with ashy grey and pale cinnamon; all the quills slaty blue, broadly barred with deep brown and with the subterminal bar very broad and narrowly edged with white; this edging is wider and more distinct on the secondaries. Seen from below, the quills appear white, with narrower deep brown bars and a broad subterminal bar; the inner webs are shaded with pale cinnamon or buffy.

Lower parts: The chin and upper throat whitish, with a mid-streak of

deep brown on each feather; lower throat, breast, and chest dull chocolate-brown, ocellated and splotched with white on each feather, the whole having a mottled appearance; remainder of underparts, including the thighs, legs, under tail- and under wing-coverts, as well as the axillaries, barred regularly cinnamon-brown and white; the shade of cinnamon is brightest on the abdomen, lower tail-coverts and thighs, and becomes deep and rich in tone on the sides of the body and under wing-coverts and axillaries.

FIG. 298.



Circus cinereus. Adult female. P. U. O. C. 7905. Detail of foot from side. Natural size.

Bill: Bluish horn-color. Cere dull yellow-green.

Iris: Hazel-brown.

Feet: Orange-yellow. Claws shining black.

First breeding plumage of female.—P. U. O. C. 7950. Rio Chico de Santa Cruz, Patagonia, 15 March, 1898. A. E. Colburn. Or. No. 204.

Head: Forehead and lores whitish. Crown deep brown, broadly edged with bright cinnamon. A dull, fulvous supraciliary stripe from the whitish forehead to the ear-coverts; the ear-coverts streaked dull brown, cinnamon and light fulvous; facial ruff light fulvous, almost white, streaked with mid-markings of dark, blackish brown on each feather; occiput much like crown, with a prevailing cinnamon tone.

Back: Deep seal-brown, most of the feathers edged narrowly with bright cinnamon, which color becomes conspicuous on the feathers of the lower back and rump; upper tail-coverts white, some immaculate, and others with faint subterminal cinnamon markings, generally arrow-shaped.

Tail: Like that of the adult female described (p. 596).

Wings: The pattern as described in the adult female (p. 596) but all the coverts, except the scapulars, with heavy cinnamon edgings and markings; the quills much as in the adult female but the slaty blue prevailing chiefly on the primaries, ashy barring on a deep brown ground characterizing the secondaries; below, the wings are more narrowly barred with deep brown than in the adult and the cinnamon wash is strong on the inner web of all the quills, except the first primary, and here it only occupies the region near the base of the feather.

Lower parts: The chin dirty white, with hair lines of deep brown, or black, each feather of the throat proper deep brown, with a broad edging of fulvous white, giving the whole a streaked look; the breast and chest broadly barred and marked with chocolate-brown, and white much shaded into cinnamon, the whole appearing mottled and suffused; the rest of the under parts, including the legs, thighs, under tail-coverts, under wing-coverts and axillaries are patterned much as in the adult (p. 597), but all the bars are more imperfect and the clear white is everywhere suffused with a strong cinnamon wash, while the barring on the sides is very strong and broad and the cinnamon markings on the under wing-coverts are often arrow-shaped or tear-shaped in the white ground of the feathers. *Birds in this phase of plumage are not streaked, but barred, on the lower parts, where that pattern prevails in the fully adult female.*

Feet, iris and bill as in the adult.

Immature birds; young of the year.—Male.—P. U. O. C. 7951. Rio Chico de Santa Cruz, Patagonia, 8 March, 1898. A. E. Colburn, collector. Or. No. 293.

Female.—P. U. O. C. 8311. Rio Chico de Santa Cruz, Patagonia, 15 March, 1898. A. E. Colburn, collector. Or. No. 307.

Size.—Like that of adults; the female larger than the male.

Color.

FIG. 299.



Circus cinereus. Female, immature. P. U. O. C. 8311. About one-fourth natural size.

General color: Varying shades of brown throughout.

Head: Forehead narrowly white; region in front of eye whitish and with many recurved blackish hairs. Crown deep brown, the feathers bordered and edged narrowly with bright cinnamon. A well defined broad supraciliary stripe of fulvous white, reaching back from the forehead to the region above the ear-coverts, defines the crown; the region below the eye colored like the supraciliary streak, almost reaching it in front and separated from it behind the eye by a broad postocular region of dark brown; cheeks and ear-coverts like the postocular region deep brown in color, but with some streaking of cinnamon; facial ruff fulvous like the

lighter markings about the face and each feather streaked broadly with deep brown. The lighter color of the head varies in different individuals from decided fulvous to nearly pure white and the brown areas vary in the amount of cinnamon relieving them.

Neck: Above and below deep brown, each feather broadly edged with cinnamon, *but not tipped with that color*, the whole having a streaked or striped appearance.

Back: Mantle and lower back, as well as rump, deep brown, the feathers narrowly tipped with bright cinnamon or pale fulvous; this is most apparent on the rump; the upper tail-coverts vary from immaculate white in some individuals to white heavily barred and marked with dull cinnamon in others; but *the white patch is always conspicuous*.

Tail: Tail cinnamon or fulvous, except the two central rectrices, which are slaty ash-blue, much as in the adults in the first breeding dress; the two central rectrices are crossed by five blackish brown bars and have a broad subterminal band of the same color, being finally tipped with whitish or fulvous; the rest of the rectrices have the cinnamon or fulvous ground-color, crossed by four dark brown or blackish bars, and by a broad subterminal band, all having whitish or fulvous tips. Seen from below, the tail presents a more ashy appearance, the fulvous or cinnamon shade being obscured.

Wings: All the quills dark brown, tipped with fulvous or dirty white; the primaries are shaded above on their outer webs with ashy slate, are barred on both webs with deep brown, and, when seen from below, this feature is most conspicuous, the inner webs being light in color and shading into fulvous or pale cinnamon; all the upper wing-coverts are deep rich brown, tipped broadly with bright cinnamon, or duller shades of that color.

Lower parts: Buff cinnamon throughout, including the under tail-coverts, the under wing-coverts and axillaries; this ground-color is streaked with dark brown on the neck, chest, breast, sides and abdomen, the effect of the bird, seen from below, or in front, *being striped and not barred*; the cinnamon ground on the under tail-coverts and legs is barred broadly with a shade of cinnamon-brown; deep brown prevails on the axillaries, barred with cinnamon; the under wing-coverts are barred with dull brown on a cinnamon ground, the whole having a mottled appearance and being much like the same region in the birds in the first breeding plumage.

Bill: Dull horn-blue; cere dull greenish.

Feet bright orange; claws black.

Iris brown.

Geographical Range.—South America from southern Brazil on the Atlantic Coast to Peru on the Pacific, thence south to the Straits of Magellan; Tierra del Fuego; the Falkland Islands.

The fine series of this harrier procured by the naturalists of the Princeton Expedition throws much light on the phases of plumage through which the birds pass. While not a very abundant bird, it seems to be a widely distributed species and appears to have no great migratory movement, being present throughout the year in the particular regions it affects. These are the more open country, where it ranges the ground much as do the harriers of Europe and North America. The birds breed on the ground on beds of dry grass, without much attempt at nest building; the eggs are pale bluish white.

Hudson in his *Naturalist in La Plata*, pp. 93-94, says:

"Hawks are the most open, violent and persistent enemies birds have; and it is really wonderful to see how well the persecuted kinds appear to know the power for mischief possessed by different raptorial species, and how exactly the amount of alarm exhibited is in proportion to the extent of the danger to be apprehended. Some raptors never attack birds, others only occasionally; still others prey only on the young and feeble; and, speaking of La Plata district, where I have observed hawks, from the *Milvago chimango*—chiefly a carrion-eater—to the destructive peregrine falcon, there is a very great variety of predatory habits, and all degrees of courage to be found; yet all these raptors are treated differently by species liable to be preyed on, and have just as much respect paid them as their strength and daring entitles them to, and no more. So much discrimination seems almost incredible to those who are not familiar with the manners of wild birds. I do not think it could exist if the fear shown resulted from instinct or inherited habit. There would be no end to the blunders of such an instinct as that; and in regions where hawks are extremely abundant most of the birds would be in a constant state of trepidation. On the pampas the appearance of the comparatively harmless chimango excites not the least alarm among small birds, yet at a distance it closely resembles a hen-harrier, and it also readily attacks young, sick, and wounded birds; all others know how little they have to fear from

it. When it appears unexpectedly, sweeping over a hedge or grove with a rapid flight, it is sometimes mistaken for a more dangerous species; there is then a little flutter of alarm, some birds springing into the air, but in two or three seconds of time they discover their mistake, and settle down quietly again, taking no further notice of the despised carrion-eater. On the other hand, I have frequently mistaken a harrier (*Circus cinereus*, in the brown state of plumage) for a chimango, and have only discovered my mistake by seeing the commotion among the small birds. The harrier I have mentioned, also the *C. macropterus*, feed partly on small birds, which they flush from the ground and strike down with their claws. When the harrier appears moving along with a loitering flight near the surface, it is everywhere attended by a little whirlwind of alarm, small birds screaming or chirping excitedly and diving into the grass or bushes; but the alarm does not spread far, and subsides as soon as the hawk has passed on its way. Buzzards (*Buteo* and *Urubitinga*) are much more feared, and create a more widespread alarm, and they are certainly more destructive to birds than harriers."

CIRCUS BUFFONI (Gmel.).

Falco buffoni, Gmelin. Syst. Nat. i. p. 277, 1788 (Cayenne).

Alilargo, Azara, Apunt. I. p. 136 (1802).

Gavilan de estero chorreado, Azara, t. c. p. 74.

Aquila maculosa, Vieill. Ois. l'Amér. sept. pl. 3 bis. (1807).

Circus macropterus, Vieill. N. Dict. d'Hist. Nat. IV. p. 458 (1816: ex Azara, p. 136); Hartl. Ind. Azara, p. 3 (1847); Schl. Mus. Pays Bas, II. Circi, p. 8 (1862: Patagonia); Scl. & Salv. Ibis, 1868, p. 183 (Sandy Point); iid. P. Z. S. 1868, p. 143 (Conchitas); Phil. & Sandb. Cat. Av. Chil. p. 6 (1868); Cunningh. Nat. Hist. Str. Magell. pp. 53, 214 (1871); Scl. & Salv. Nomencl. Av. Neotr. p. 118 (1873); Doering, Expl. al Rio Negro, Zool. p. 50 (1882: Rio Colorado); Gurney, List Diurn. B. Prey, p. 20 (1884); Aplin, 1894, Ibis, 1894, p. 194 (Uruguay).

Circus albicollis, Vieill. N. Dict. d'Hist. Nat. IV. p. 456 (1816: ex Azara, p. 74); Hartl. Ind. Azara, p. 1 (1847).

Circus leucophrys, Vieill. t. c. p. 454.

Morphnus maculosus, Cuv. Règn. Anim. I. p. 319 (1817).

Falco palustris, Temm. Pl. Col. I. p. 22 (1824).

- Circus palustris*, Less. Man. d'Orn. I. p. 105 (1828).
Circus superciliosus, Less. Traité d'Orn. p. 87, pl. 3, fig. 1 (1831).
Buteo macropterus, D'Orb. Voy. Amer. Mérid. p. 112 (1835).
Harpyia maculosa, Swains. Classif. B. II. p. 208 (1837).
Circus megaspilus, Gould, P. Z. S. 1837, p. 10 (Maldonado); Darw. Voy. Beagle, Birds, p. 29 (1841: La Plata, July); Pelz. Reis. Novara, Vög. p. 14 (1865: Chili).
Spizacircus macropterus, Kaup, Mus. Senckenb. III. p. 258 (1845).
Circus maculosus, Strickl. Orn. Syn. p. 155 (1855); Sharpe, Cat. B. Brit. Mus. I. p. 62 (1874); Gurney, List Diurn. B. Prey, p. 20 (1884); Sharpe, Hand-list B. I. p. 245 (1899); Martens, Hamb. Magalh. Sammelr. p. 5 (1900: Punta Arenas); Albert, Contr. Estud. Aves Chil. II. p. 507 (1901).

GENERAL DESCRIPTION.

Size.—Adult male.

Total length, about 21.00 inches.

Wing, 17.00 inches.

Culmen, 1.40 inches.

Tail, 9.9 inches.

Tarsus, 3.2 inches.

Color.—Adult.

General color: Above, blackish, with a slaty blue shading; below, white, with some darker streaks and spots on the chest and flanks, as well as on the axillaries.

Head: Forehead and a connecting supraciliary stripe white, as is the forepart of the cheeks; crown and sides of the face black, with a bluish gloss or shade; the facial ruff the same shade, slightly spotted with pure white.

Neck: Above, like the head and back; the throat and foreneck and the chin white or whitish; the ruff below plainly varied with white.

Back: Mantle black and, like the crown, somewhat shaded with a blue gloss; lower back and rump uniform black; upper tail-coverts white, often showing traces of cinnamon or rufous cross-bars.

Tail: Two central rectrices ashy, crossed by five blackish bars and with a broader subterminal band of like color tipped with dull whitish; the rest of the rectrices ashy on the outer and whitish on the inner webs and

barred, banded and tipped much like the central pair; the black bars on the outer pair of rectrices shade distinctly with cinnamon, or bright rufous; the tail appears much lighter, seen from below, as the black bars are suffused on the lower surface with white, or silver.

Wings: Upper coverts, including the primary coverts, bluish ash or grey, with blackish brown banding; the quills bluish grey, banded with deep brown; the primaries shading into sepia toward the tips and banded with deep brown; the secondaries much like the primaries, except that the inner series are black in tone and shaded like the upper back; seen from below, the wings appear ashy, deep grey in tone, the inner webs of the primaries being shaded with cinnamon near their bases.

Lower parts: Chin white; throat and foreneck black or blackish; the rest of the under surface white, chiefly immaculate, but with a few black streaks on the breast, the flanks barred with rufous brown, the abdomen, vent and thighs almost immaculate, the under tail-coverts with a few dull rufous bars, the under wing-coverts and axillaries white, with an even barring of dull blackish in both regions.

Bill dark horn-brown, almost black; cere bluish.

Feet lemon-yellow.

Iris pale yellow.

Immature birds; young of the year.—Head: Forehead; a supraciliary streak, region in front of eye and fore part of cheeks dirty white; crown deep brown, with tawny rufous or cinnamon edges to the feathers; ear-coverts deep brown; facial dull fulvous, somewhat streaked with dark brown.

Neck: Nape and sides deep brown, varied with lighter buffy markings; throat and chin whitish; lower neck dark brown, each feather margined with fulvous.

Back: Mantle, lower back and rump deep dark brown, each feather with tawny rufous or bright cinnamon tips; this is most apparent on the rump; the upper tail-coverts white, pure in tone and barred with dark brown or cinnamon brown.

Tail: Ashy grey, with four bars and a subterminal broader band of blackish brown, each rectrix tipped with dull white or fulvous.

Wings: All the upper wing-coverts, including the primary series, deep brown, like the back, and with tawny rufous or bright cinnamon tips to the feathers; the quills all ashy grey, becoming dark brown toward the tips

and barred with blackish brown; the inner secondaries are like the back in color; the tips of all the quills narrowly fulvous.

Lower parts: Chin and throat as described; the body and sides dark brown, each feather with a narrow, definite, fulvous, or pale cinnamon edge, the whole having a striped appearance; the thighs, feathered part of the legs and under tail-coverts bright chestnut or cinnamon, the tail-coverts spotted with dull buff.

Bill: Dark brown horn; cere dull bluish green.

Feet: Bright yellow.

Iris brown.

Geographical Range.—All eastern South America, from the coast to the Cordillera, and from Venezuela to the Straits of Magellan; probably the northern parts of Tierra del Fuego.

This harrier was not obtained or observed by the naturalists of the Princeton Expeditions. It appears to be much less common than *Circus cinereus*, and but little has been written as to its habits. These do not vary greatly from those of its congener, according to Hudson and other field workers who have become acquainted with the bird.

Genus ACCIPITER Brisson.

Type.

Accipiter, Briss. Orn. i. p. 310 (1760); Sharpe, Cat. Bds.

Brit. Mus. i. p. 130 (1874); Sharpe, Hand-list Bds. i.

p. 252 (1899) *A. nisus*.

Nisus, Cuv. Leçons Anat. Comp. i. tabl. Ois. (1799). . . *A. nisus*.

Ierax, Leach, Syst. Cat. Mamm. &c. Brit. Mus. p. 10 (1816). *A. nisus*.

Hieraspiza, Kaup, Class. Säug. u. Vög. p. 116 (1844) . . *A. virgatus*.

Cooperastur, Bp. Rev. et Mag. de Zool. 1854, p. 538 . . *A. nisus*.

Teraspiza, Kaup, P. Z. S. 1867, p. 171 *A. virgatus*.

Geographical Range.—World-wide, but absent from Oceania, west Australia and New Guinea.

ACCIPITER CHILENSIS Philippi & Landbach.

Accipiter chilensis, Phil. & Landb. Arch. für. Naturg. 1864, p. 43; Scl. P.

Z. S. 1867, p. 329; id. & Salv. Exot. Orn. pp. 73, 170, pl. xxxvii (1867); iid. Ibis, 1868, p. 188 (Sandy Point, Feb.); Phil. & Landb.

Cat. Av. Chil. p. 5 (1868); Scl. & Salv. Nomencl. Av. Neotr. p. 120

(1873: Patagonia); Sharpe, Cat. B. Brit. Mus. I. p. 155 (1874: Straits

of Magellan); Oust. Miss. Scient. Cap Horn, Oiseaux, pp. 21, 324 (1891: Punta Arenas, Feb.; Orange Bay, June; Sandy Point, Feb.); Graham Kerr, Ibis, 1892, p. 143 (Lower Pilcomayo); Lane, Ibis, 1897, p. 180 (Maquequa); Sharpe, Hand-list B. I. p. 254 (1899); Martens, Hamb. Magalh. Sammelr. p. 5 (1900: Straits of Magellan); Salvad. Ann. Mus. Genov. (2), xx. p. 614 (1900: Penguin Rookery, Feb.; Punta Arenas, May).

Accipiter cooperi, (Pelz. (nec Bp.), Reise Novara, Vög. p. 13 (1865: Chili).

Nisus chilensis, Giebel, Thes. Orn. 2, p. 706 (1872).

Cooperastur chilensis, Gurney, Ibis, 1875, p. 469; id. List Diurn. B. Prey, p. 144 (1884).

FIG. 300.



Accipiter chilensis. Profile of head. Natural size.

GENERAL DESCRIPTION.

Size.—Adult male.

Total length, about 16.00 inches.

Wing, 8.50 inches.

Culmen (including cere), 1.25 inches.

Tail, 7.90 inches.

Tarsus, 2.50 inches.

The adult female is noticeably larger than the adult male; length, 18.00 inches; wing, 10.00 inches; tail, 8.25 inches; tarsus, 3.90 inches.

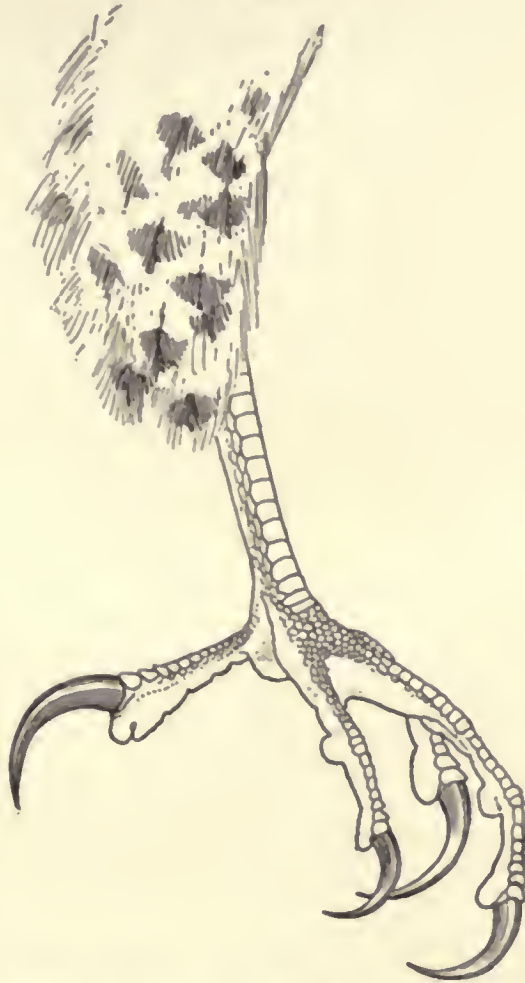
Color.—*Adult male*.—The sexes are alike in color.

Head: Dull brownish slate, shaded heavily with blackish on the crown; sides of the face and ear-coverts much lighter ashy grey.

Neck: The nape and sides clear ashy slate with a brownish tinge; chin and throat whitish, the throat streaked and mottled with dull ashy-brown markings.

Back: Dull, ashy slate, darker than the neck and lighter than the crown, shaded with brownish; rump and upper tail-coverts like the upper back, but somewhat lighter in tone.

FIG. 301.



Accipiter chilensis. Detail of foot. Natural size.

Tail: Brownish ash, each rectrix crossed with six almost black bars and with narrow whitish tips; the tail from below presents a silvery-white surface, somewhat shaded with ashy, and with the black bars very distinct and contrasted on the ground color.

Wings: The upper wing-coverts, including the primary series, concolor with the back; all the quills brownish, with but slight ashy shading, and barred definitely with much darker brown; seen from beneath, the wings

are ashy white, much like the under tail surface, and barred blackish brown, in strong contrast to the white interspaces.

Lower parts: Chin, throat and lower neck as described; the rest of the under surface dull grey, with large white spots, margined generally with brownish edges and forming bars on some of the feathers; the breast is often shaded with rufous; the abdomen is distinctly banded with that shade; the thighs and feathered parts of the legs are tawny rufous or bright cinnamon; under tail-coverts immaculate white; under wing-coverts rufous, mottled with darker brown spots; axillaries barred white and rufous, and with brown edges like the feathers of the breast. There are no field notes that record the color of the eyes, feet and bill.

FIG. 302.



Accipiter chilensis. Immature. One-fourth natural size.

Immature plumage.—Head: Forehead, region in front of eye and a rather ill-defined eye-stripe dirty whitish; crown blackish brown, each feather margined with rufous; white bases of the occipital feathers conspicuous; ear-coverts and sides of face whitish, streaked heavily with dark brown.

Neck: Nape nearly white, streaked with deep brown, the whole shading into fulvous on the hind neck; throat and chin white; lower neck creamy, each feather streaked with deep brown.

Back: Deep brown, most of the feathers with narrow margins of rufous, least distinct on the upper back, but conspicuous on the upper tail-coverts.

Tail: Dull ash-brown, each feather tipped with ashy white and crossed by six bars, somewhat obsolete on the upper surface, but very definite and strongly contrasted on the ashy white of the under surface.

Wings: The upper wing-coverts like the back, dull deep brown, with rufous margins and edges; the quills brown, barred with blackish brown; the secondaries tipped with whitish and with concealed white spots; the wing from beneath shows the barring very distinctly, relieved by the ashy white interspaces.

Lower parts: Throat and chin as described; the remainder of the lower surface creamy buff, with broad oval streaks, or spots, of deep brown on each feather, the whole having a striped appearance; this marking is accentuated on the sides; the thighs and feathered portion of the legs bright rufous, barred and spotted with deep brown; under wing-coverts deep buff, barred with dark brown; axillaries dirty whitish, with rufous barring.

There is no available record of the color of the naked parts, or eyes from freshly killed birds.

Geographical Range.—Chili, ranging south to the Straits of Magellan, Orange Bay, Punta Arenas and Penguin Rookery; southern Patagonia.

This appears to be an uncommon bird of prey in the regions visited by the naturalists of the Princeton Expeditions; they did not meet with the bird. There are numerous records of the hawk in the Straits region and in the foothills of the Cordillera in Chili. It is a bird that preys chiefly on smaller birds and rarely on mice or the larger insects. It is the prototype of *Accipiter nisus* in Europe and of *Accipiter velox* (= *A. fuscus*) in North America and is like these birds in its general economy and habits. The breeding habits of the species are but little known and there are no eggs in the collections of the British Museum.

Subfamily BUTEONINÆ.

Sharpe, Cat. Bds. Brit. Mus. i. p. 158 (1874); Sharpe, Hand-list Bds. i. p. 254 (1899).

Genus HETEROSPIZIAS Sharpe.

Type.

- Heterospizias*, Sharpe, Cat. Bds. Brit. Mus. i. p. 160
(1874); Hand-list Birds, i. p. 254 (1899) . . . *H. meridionalis*.
Spizigeranus, Gray, Hand-list Bds. i. p. 9 (1869, nec
Kaup) *H. meridionalis*.
Spizigeranus, Agassiz (1844) = *Spizigeranus*.
Hypomorphnus, Cabanis (1844) *H. meridionalis*.

Geographical Range.—Northern and central portions of South America;
casual in northern Patagonia (C. Burmeister).

HETEROSPIZIAS MERIDIONALIS (Latham).

- Rufous-headed Falcon, Lath. Gen. Syn. Suppl. p. 33 (1787).
Falco meridionalis, Lath. Ind. Orn. I. p. 36 (1790).
Gavilan de estero acanelado, Azara, Apunt. I. p. 72 (1802).
Circus rufulus, Vieill. N. Dict. d'Hist. Nat. IV. p. 466 (1816).
Falco rutilans, Licht. Verz. Doubl. p. 60 (1823); Temm. Pl. Col. I. pl. 25
(1824).
Aquila buzon, Spix. Av. Bras. I. p. 6 (1824).
Circus rutilans, Stephens in Shaw's Gen. Zool. XIII. part ii., p. 43 (1825).
Buteo rutilans, Less., Man. d'Orn. I. p. 104 (1828); Hartl. Ind. Azara, p.
1 (1847).
Hypomorphnus rutilans, Cab. Arch. für. Naturg. 1844, p. 264.
Rupornis meridionalis, Kaup, Contr. Orn. 1850, p. 68.
Astur rufulus, Strickl. Orn. Syn. p. 422 (1855).
Buteogallus meridionalis, Scl. P. Z. S. 1860, p. 288.
Asturina rutilans, Burm. La Plata Reise II. p. 436 (1862: Tucuman); C.
Burm. An. Mus. Nac. Buenos Aires, III. part XI. p. 316 (1890: Rio
Chico del Chubut, Patagonia).
Buteo meridionalis, Schl. Mus. Pays. Bas. II., Buteones, p. 17 (1862).
Urubitinga meridionalis, Scl. & Salv. P. Z. S. 1867, p. 589, 1869, p. 252,
p. 634 (Buenos Aires); iid. Nomencl. Av. Neotr. p. 119 (1873);
Durnf. Ibis, 1880, p. 362 (Salta).
Heterospizias meridionalis, Sharpe, Cat. B. Brit. Mus. I. p. 160 (1874);
Barrows, Auk, I. p. 109 (1884: Entrerios); Scl. & Huds. Argent. Orn.
II. p. 63 (1899); Sharpe, Hand-list B. I. p. 254 (1899).

GENERAL DESCRIPTION.

Size.—Adult male.

FIG. 303.



Heterospizias meridionalis. Adult. About one-third natural size.

Total length, about 21.00 inches.

Wing, 16.5 inches.

Culmen, 1.5 inches.

Tail, 8.2 inches.

Tarsus, 4.2 inches.

Color.—Adult male.

Head: Rufous, shading into whitish on the lores; and into ashy grey on the sides of the face and the ear-coverts.

Neck: Rufous, shaded on the throat with ashy; the upper neck shading into the color of the interscapular region, and the lower or under neck into the breast color.

Back: Interscapular region pale, slaty grey, each feather margined and tipped with rufous; lower back, rump and upper tail-coverts blackish; the upper tail-coverts glossed with deep purple and tipped with white.

Tail: Dull blackish, washed with purple, mottled and suffused with rufous at the base, with a broad white band across the middle of the tail and a much narrower terminal band of pure white.

Wings: Scapulars pale, slaty lead-color, or greyish, each feather margined with rufous; lesser wing-coverts bright rufous; the rest of the coverts slaty lead, with broad rufous tips, the median series margined beside with the same color; the quills rufous; the primaries becoming black toward their extremities, and the secondaries with a conspicuous subterminal band or bar of purplish brown, deep in tone; the inner secondaries are wholly this color; under wing-coverts and axillaries uniform bright rufous.

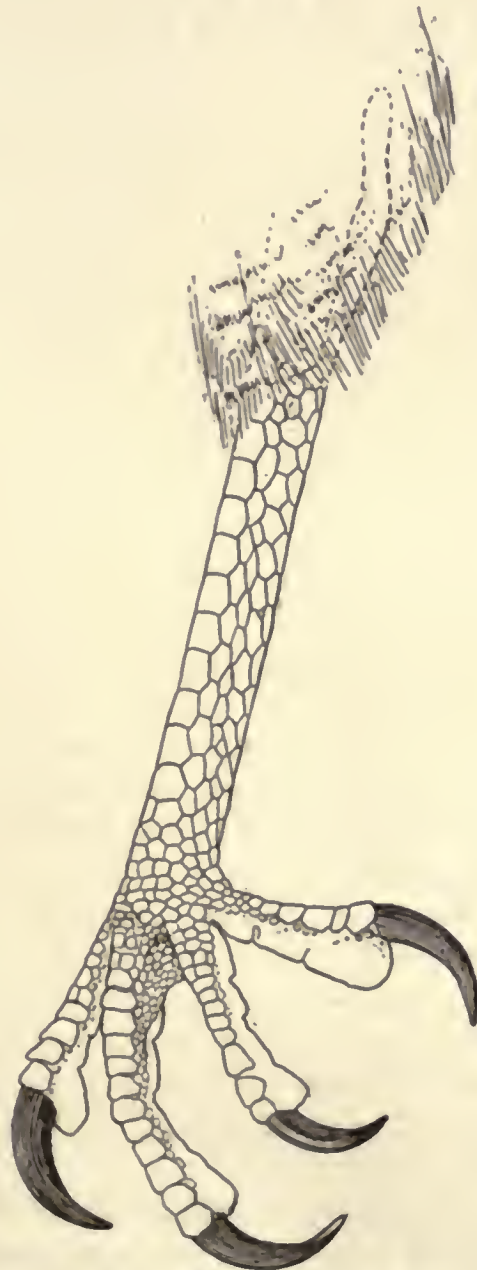
Lower parts: Breast and abdomen, as well as the sides and thighs, rufous, with more or less distinct narrow barring throughout (there is great individual difference in birds, all apparently adult, in this barring; it is almost obsolete in some, showing plainly only upon the breast, while in others it includes, as in the bird from which the black and white drawing was made, clear barring extending even to the thighs, where it is as plain as at any other part; often the thighs are immaculate); the lower tail-coverts generally immaculate bright rufous, but occasionally showing traces of narrow, obsolete blackish bars. There are no field notes as to the color of the bill, the cere, the irides or the legs and feet.

The adult female is like the adult male in appearance, but notably larger; length, about 24.50; wing, 18.40; tail, 10.2 inches, and tarsus, 5.00 inches.

Immature birds and young of the year: Dusky or blackish above; the dark feathers of the crown decorated with notches and bars of deep rufous; the crown defined by a more or less conspicuous supraciliary stripe of

clear bright rufous; the sides of the face and ear-coverts dusk, with some dull rufous shading; the back is blackish, with narrow rufous edging to the feathers; the lesser wing-coverts are bright rufous, much as in the adult, and the rest of the wing is much like the back, but the feathers

FIG. 304.



Heterospizias meridionalis. Details of foot. Female. Natural size.

mottled with dull rufous and edged with a like color; the tail has the general deep brown tone with purplish shading found in the adult; it is in the youngest birds decorated with several obsolete bands of ashy grey, the base being finely mottled with the same shade; the subterminal band is well-defined and the terminal white tips to the feathers are clear. In birds which appear to be older, the first breeding season, but not yet in full plumage, the tail has two or more white bars near the base in addi-

FIG. 305.



Heterospizias meridionalis. Female. Natural size.

tion to the median clear white band and the terminal white margin. There seems to be no intermediate or transitional plumage between this and the adult stage, when the tail is characterized as indicated above. The lower parts are pale rufous, barred with blackish, often concentrated on the breast and chest into a distinct dark area, forming a broad band, but more frequently homogeneous in barring throughout; as already described under the adult, this barring varies much in clearness till the bars almost disappear from the lower surface, except on the breast, in what seem to be the oldest birds.

Geographical Range.—The same as that given for the genus, it being mono-typic.

This species is included in the present account of the bird-fauna of Patagonia chiefly on the record of specimens from the Rio Chico del Chubut, Patagonia, by C. Burmeister. That it is of common occurrence

in northern Argentina there seems to be no question, but our knowledge of its life history is at present meager.

W. B. Barrows says of its occurrence in Uruguay (Auk, 1884, pp. 109-110): "Not unfrequently seen at Concepcion in cold weather, and a single one was seen as late as September 29.

FIG. 306.



Heterospizias meridionalis. Immature male. One-third natural size.

"About July 21, 1880, during an almost unprecedented rise of the river, many rather scarce Hawks became quite abundant for a few days, and among them was the present species. A female, taken July 21, appeared so gorged with food that it was easily shot, but an examination

showed that though its crop was crowded to its utmost capacity, it contained nothing but young grasshoppers, not a trace of other food being found in its stomach."

Genus TACHYTRIORCHIS Kaup.

Type.

Tachytriorchis, Kaup, Classif. Säug. u. Vög. p. 123 (1848); Sharpe, Cat. Bds. Brit. Mus. i. p. 161 (1874); Sharpe, Hand-list Bds. i. p. 254 (1899). *T. albicaudatus*.
Geographical Range.—Eastern and central Brazil from the Tropic of Capricorn northwards to Guiana and Colombia, along the western coast of Central America into the southwestern boundary of the United States.

TACHYTRIORCHIS ALBICAUDATUS (Vieillot).

- Aquila coliblanca*, Azara, Apunt. I. p. 69 (1802).
Buteo albicaudatus, Vieill. N. Dict. d'Hist. IV. p. 477 (1816); Pucher. Rev. et Mag. Zool. 1857, p. 87; Gurney, Ibis, 1875, p. 67; id. List Diurn. B. Prey, p. 69 (1884); Scl. & Huds. Argent. Orn. II. p. 61 (1889); Albert, Contr. Estud. Av. Chil. II. p. 519 (1901).
Spizaetus leucurus, Vieill. N. Dict. d'Hist. Nat. xxxii. p. 59 (1819: ex Azara).
Falco pterocles, Temm. Pl. Col. I. pls. 56, 139 (1823).
Buteo pterocles, Less. Man. d'Orn. I. p. 103 (1828); Scl. & Salv. Nomencl. Av. Neotr. p. 119 (1873); Durnf. Ibis, 1876, p. 161 (Buenos Aires); Doering, Expl. al Rio Negro, Zool. p. 51 (1882: abundant in the valley of the Rio Negro about Choelechoel); White, P. Z. S. 1882, p. 622 (Monte Grande, April); Barrows, Auk, I. p. 109 (1884: Arroyo Gualaguaychu, April).
Buteo albicauda, Less. Traité d'Orn. p. 81, pl. 15, fig. 2 (1831).
Tachytriorchis pterocles, Kaup. Classif. Säug. u. Vög. p. 123 (1844); id. Contr. Orn. 1850, p. 75.
Buteo tricolor, Hartl. (nec. d'Orn.) Ind. Azara, p. 1 (1847).
Buteo leucurus, Lafr. Rev. Zool. 1849, p. 100.
Tachytriorchis albicaudatus, Sharpe, Cat. B. Brit. Mus. I. p. 162 (1874); id. Hand-list B. I. p. 254 (1899).
Buteo melanostethos, Phil. Vög. Chil. Arch. Naturg. 1899, p. 107 (Chili).
Buteo pæcilogaster, Phil. tom. cit. p. 167.
Buteo (Asturina?) æthiops, Phil. tom. cit. p. 168.
Buteo pteroclis, Carbajal, La Patagonia, Part II. p. 256 (1900).

FIG. 307.



Tachytiorchis albicaudatus. Adult male. Brazil, September. 34,705 American Museum Natural History. About one-fourth natural size.

GENERAL DESCRIPTION:

Size.—Adult male.

Total length, about 21.00 inches.

Wing, 17.00 inches.

Culmen, 1.5 inches.

Tail, 7.6 inches.

Tarsus, 3.6 inches.

Color.—Adult male.

Head: Plain bluish grey, slaty or dark slaty; darker in the region about the eye; (this body-color varies in different individuals without regard, apparently, to age, i. e., all birds in this plumage may be regarded as in the final adult phase).

Neck: Throat and back of neck slaty, or grey; the lower under neck white.

Back: Interscapular region and lower back clear slate, or slaty grey; the rump and upper tail-coverts pure white; some of the feathers of the beginning of the white on the rump tinged with rusty.

FIG. 308.



Tachytriorchis albicaudatus. Adult male, cited. Natural size.

Tail: White, with a broad sub-terminal band of black, and a terminal narrow bar of pure white; the part of the tail anterior to the sub-terminal band of black has the white crossed by numerous narrow stripes, or lines of slaty grey, or pale slate color.

Wings: Darker than the back of the same tone and with the anterior lesser coverts rusty, as are often some of the smaller scapulars; less frequently this rusty shade is apparent on the longer scapulars; under wing-coverts white; axillaries white, barred with slaty or grey.

Lower parts: Except the throat, white; immaculate generally save on the flanks, thighs and under tail-coverts, which usually are faintly barred and marked with rusty, ash-grey, or dusky. Field notes on the colors of the bill, cere, feet and legs, as well as that of the irides, are not available.

Adult female.—Similar to the adult male, but with a greater amount of rusty on the shoulder and the general color usually darker and richer; larger than the adult male; length 23.00; wing 17.80; tail 10.25.

Immature birds and young of the year.—*Male; young of the year*.—General color of the plumage deep dusky brown; the head darker, the lores white or whitish, and an indistinct white eyebrow; the feathers of the

shoulders with rusty margins and concealed rusty marks; the tail hoary grey, with a distinct broad terminal band of a much darker shade, blackish or dusky grey, in front of which are sixteen or more narrow bars of dusky

FIG. 309.



Tachytiorchis albicaudatus. Adult male; detail of foot. Natural size.

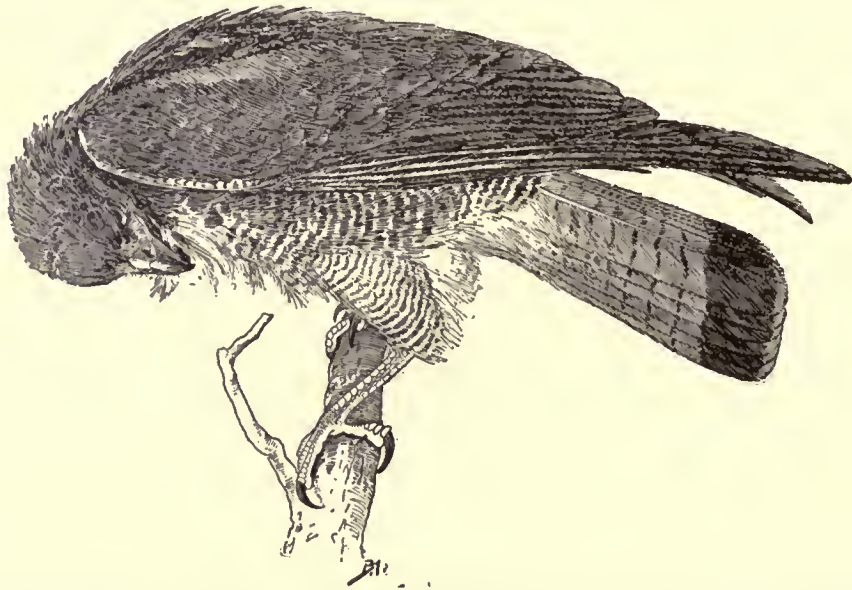
grey; the throat and breast like the upper parts and the remainder of the lower parts inclining to white, or fulvous white with dark markings, arrows, or bars on most of the feathers.

Female; young of the year.—Much like the preceding bird, but with the sub-terminal band on the tail clearly defined, the ground-color and a ter-

minal bar deep ashy grey, and the region in front of the sub-terminal band crossed by eight or more narrow obscure blackish bars that are almost lines, as in the adult. The rusty color on the shoulders more pronounced than in the young male.

Downy young.—Upper part of the head dark sooty brown, nearly black about the eyes, shading into lighter smoky brown on the neck and back, this becoming lighter toward the region of the tail; on the lower neck and

FIG. 310.



Tachytiorchis albicaudatus. Female of the year. From a bird in the American Museum. One-fourth natural size.

breast the sooty brown fades into buff and this into nearly white on the abdomen. There is a male, apparently perfectly adult, in the collection of the American Museum of Natural History, No. 34, 710, which is figured on p. 622. (Fig. 312.) This bird presents what appears to be a dimorphic phase of plumage. It is dusky or blackish throughout except on the rump, the upper tail-coverts and the region about the vent and lower tail-coverts, all of which are white and in markings much as in the ordinary adult male; the tail is like that of the ordinary male bird, white with a sub-terminal broad black band, a terminal white bar, and the region of pure white in front of the sub-terminal band crossed by narrow lines or bars of dusky.

Geographical Range.—Tropical South America; south to the Rio Negro region of Patagonia; north into Central America and southern Mexico; intergrading thence with the form *sennetti*, which represents the typical *albicaudatus* throughout Mexico, southern Texas and southern Arizona.

Mr. Hatcher and his associates did not penetrate to that part of Patagonia where these birds have been found and the descriptions in the foregoing pages are from the series of birds in the British Museum of Natural History and in the American Museum in New York.

FIG. 311.



Tachytiorchis albicaudatus.. Immature male. From bird in the American Museum.
One-fourth natural size.

The birds, as found in their northern range, nest in low bushes and trees, often in the yucca and sometimes in cacti. But little seems to have been contributed to the life history of this hawk. It is a bird that feeds on smaller mammals and at times on carrion, but rarely on other birds. The eggs are not in the collections of the British Museum and are believed to be undescribed.

FIG. 312.



Tachytiorchis albicaudatus. Male in dark plumage. From a bird in the American Museum.

Genus BUTEO Lacépède.

Type.

Buteo, Lacép. Tableaux Ois, p. 4 (1799); Sharpe, Cat.

Bds. Brit. Mus. i. p. 164 (1874); Sharpe, Hand-

List Bds. i. p. 255 (1899) *B. buteo*.

Craxirex, Gould, in Darw. Voy. Beagle, Birds, p. 22

(1841) *B. galapagensis*.

Butaquila, Hodgs, in Gray's Zool. Misc. p. 81 (1844) . *B. ferox*.

Pœcilopternis, Kaup, Isis, 1847, p. 329 *B. latissimus*.

Geographical Range.—Found throughout the world except in the Indo-Malayan region and in Australasia and in Oceania.

BUTEO MELANOLEUCUS (Vicillot).

Aquila obscura y blanca, Azara, Apunt. I. p. 61 (1802).

Aquila parda, Azara, tom cit. p. 65.

Spizaetus melanoleucus, Vieill. N. Dict. d'Hist. Nat. xxxii. p. 57 (1819: ex Azara, p. 61).

Spizaetus fuscescens, Vieill. tom cit. p. 55 (ex Azara, p. 65); Hartl. Ind. Azara, p. 1 (1847).

Falco aguiä, Temm. Pl. Col. I. pl. 302 (1824).

Haliaetus aguiä, Cuv. Règn. Anim. I. p. 327 (1829); Fraser, P. Z. S. 1843, p. 108 (mountainous parts of Chili).

Haliaetus melanoleucus, D'Orbign. Voy. Amér. Mérid. p. 76 (1835: Patagonia); id. & Lafr. Syn. Av. p. 3 (1838); Burm. Reis. La Plata, II. p. 435 (1861: Paraná: Tucuman: Pampas); C. Burm. An. Mus. Nac. Buenos Aires, III. part X. p. 241 (1888: Northern Patagonia), part xi, p. 315 (1890: Rio Singeur: Rio Chico del Chubut).

Geranoaetus aguiä, Kaup, Classif. Säug. u. Vög. p. 122 (1844); Hartl. Naum. 1853, p. 220.

Buteo aguiä, Cab. & Tschudi, Arch. für Nat. 1844, p. 264.

Pontoaetus melanoleucus, Gray, Gen. B. I. p. 18 (1845); Hartl. Ind. Azara, p. 1 (1847); Des Murs in Gay's Hist. Chil. Zool. I. p. 221 (1847); Phil. & Landb. Cat. Av. Chil. p. 4 (1868).

Cuncuma melanoleucus, Gray, Cat. Accipitr. p. 25 (1848).

Heteroaetus aguiä, Kaup, Contr. Orn. 1850, p. 74.

Geranoaetus melanoleucus, Strickl. Orn. Syn. p. 55 (1855); Pelz. Reis. Novara, Vög. p. 7 (1865: Chili); Scl. & Salv. Ibis, 1869, p. 284 (Cape Negro, Nov.); Cunningh. Nat. Hist. Str. Magell. p. 269 (1871); Huds. P. Z. S. 1872, pp. 536, 549 (Rio Negro); Scl. & Salv. Nomencl. Av. Neotr. p. 119 (1873); Lee, Ibis, 1873, p. 131 (Argent. Rep.); Gurney, Ibis, 1876, p. 66; Durnf. Ibis, 1877, p. 38 (Chupat Valley, breeding in Nov.), 1878, p. 397 (Tambo Point, Dec. nesting); Scl. & Salv. P. Z. S. 1878, p. 434; Gibson, Ibis, 1879, p. 409 (Cape San Antonio, Dec. breeding); Scl. & Salv. Voy. Chall. II. Birds, p. 104 (1880: Elizabeth Isl., Jan.); Doering, Expl. al Rio Negro, Zool. p. 51 (1882: banks of the Rio Negro, breeding); White, P. Z. S. 1882, p. 263 (Campo Colorado, Oran, Salta, Nov.); Gurney, List Diurn. B. Prey, p. 74 (1884); Barrows, Auk, I. p. 110 (1884: Entre-

rios & Ventana, abundant resident); Scl. & Huds. Argent. Orn. II. p. 64 (1889: Patagonia); Ridgw. Proc. U. S. Nat. Mus. XII. p. 136 (1889: Elizabeth Isl.); Frenzel, J. f. O. 1891, p. 114 (Córdoba); Graham Kerr, Ibis, 1892, p. 143 (Lower Pilcomayo); James, New List Chil. B. p. 7 (1892); Aplin, Ibis, 1894, p. 194 (Uruguay); Schalow,

FIG. 313.



Buteo melanoleucus. Adult male, P. U. O. C. 8992. About one-fifth natural size.

Zool. Jahrb. Suppl. IV. p. 695 (1898: Ovalle: Cape Espiritu Santo, East Fuegia, Feb.); Sharpe, Hand-list B. I. p. 255 (1899); Salvad. Ann. Mus. Genov. (2) xx, p. 614 (1900: Santa Cruz, Jan. and July); Carbajal, La Patagonia, Part II. p. 256 (1900); Albert, Contr. Estud. Av. Chil. II. p. 529 (1901).

Asturina melanoleuca, Schl. Mus. Pays Bas II. Asturinæ, p. 5 (1862: Patagonia).

Buteo melanoleucus, Sharpe, Cat. B. Brit. Mus. I. p. 168 (1874: Rio Negro: Eastern Patagonia); Oust. Miss. Scient. Cap Horn, Oiseaux, pp. 35, 324 (1891: Santa Cruz, Sept.: Salinas, Dec.: Delgada Point, June); Gosse in Fitzger. Highest Andes, App. C. p. 343 (1899: Inca, breeding); Martens, Hamb. Magalh. Sammelr. p. 5 (1900: Patagonia: Tierra del Fuego).

GENERAL DESCRIPTION.

Size.—Adult male, No. 8992, P. U. O. C.; Chubut, Patagonia, July, 1896. Collector, Museo de La Plata.

Total length, about 28.00 inches.

Wing, 21.0 inches.

Culmen, 2.3 inches.

Tail, 10.5 inches.

Tarsus, 4.2 inches.

FIG. 314.



Buteo melanoleucus. Adult female. One-half natural size.

Color.—Adult male cited.

General color: Above, smoky blue-black; below, ashy on the throat, a broad band of smoky blue-black on the chest and breast, rest of under surface pure white, with faint line-like barring of ashy brown.

Head: Whole top of head and crown smoky blue-black; the lores and sides of the face ashy, with fine hair-like lines of blackish, and the ear-coverts ashy, shaded with smoky blue-black. The bases of all the feathers

of the crown and top of head cottony white, and the feathers decidedly lanceolate in shape.

Neck: The chin and throat ashy grey, with the shafts of the feathers showing as distinct hair-like lines of black; upper neck smoky blue-black, concolor with the crown and the feathers with the same cottony white bases and more or less pointed tips.

Back: The entire back, including the upper tail-coverts, smoky blue-black; the feathers of the interscapular region barely tipped with white (the remaining signs of immaturity, as most adults are not decorated in this way). The bases of all the feathers, including the upper tail-coverts, cottony white.

FIG. 315.



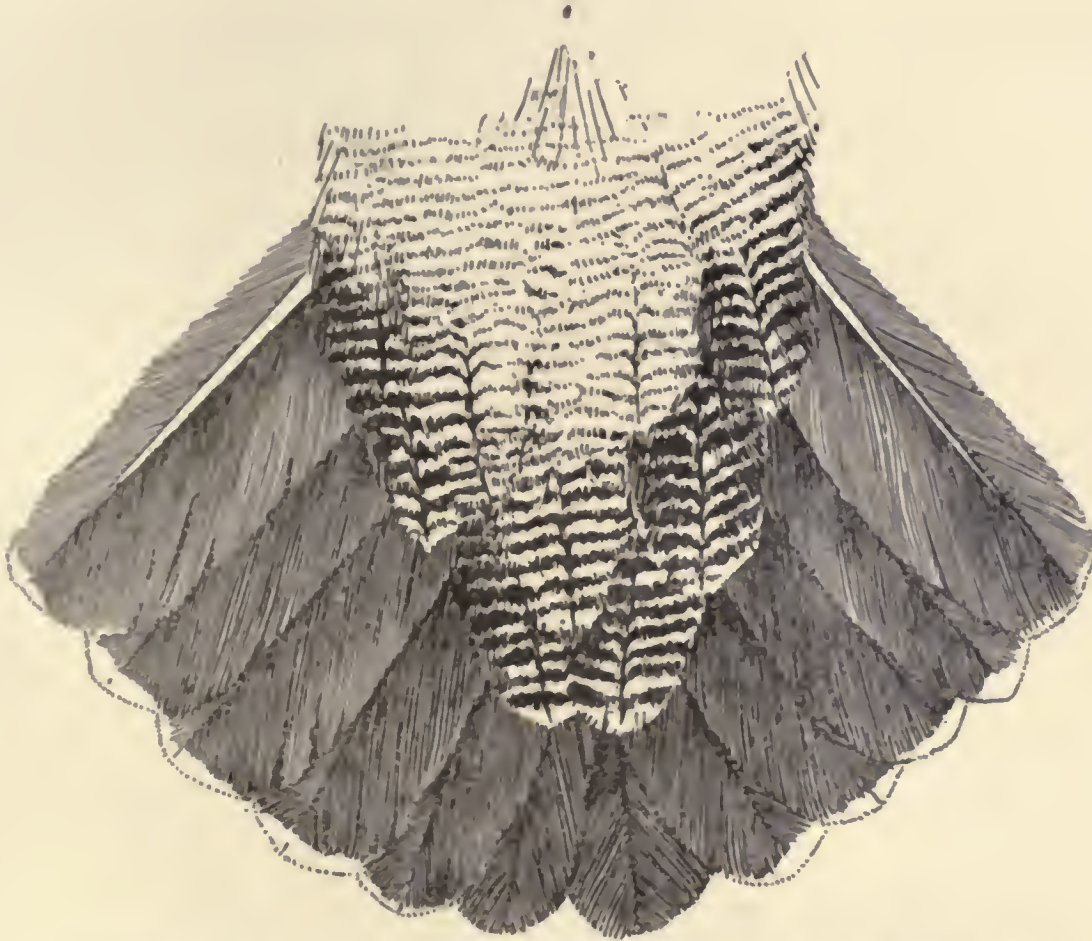
Buteo melanoleucus. Tail from above; reduced.

Tail: The upper surface dull black, the feathers narrowly and rather obsoletely tipped with ashy white; the lower surface dull black, with a decided brownish tinge and the light tips to the feathers much plainer and better defined.

Wings: The quills dull black, immaculate at the extremities and shaded and barred on their outer webs with hoary ashy grey, barred, shaded and vermiculated on their inner webs with a deeper shade of blue-grey; on the exposed surfaces of the inner secondaries a shade of dull brown suf-

fuses the barring; scapulars smoky blue-black; all the upper wing-coverts (in this particular individual) barred; the least and median series with ashy brown on a grey or silvery ground; the greater series smoky blue-black with distinct bars of ashy grey and smoky blue-black of about even

FIG. 316.



Buteo melanoleucus. Tail from below. Adult male. About one-half natural size.

width; here as on the inner secondaries there is a brownish wash or tinge on the inner feathers of the series (the greater coverts in some individuals are clear smoky blue-black like the back); under wing-coverts and axillaries white, very silvery in tone and crossed by many narrow ashy brown bars.

Lower parts: Chin and throat ashy grey; a broad, well-defined band of smoky blue-black across the breast and chest terminates abruptly and well

defined on the silvery white of the rest of the under surface, the abdomen, the sides, thighs, flanks, the feathers about the vent and some of the under tail-coverts (in this individual many of the feathers of the breast band are tipped just at the end with silvery white; probably a sign of immaturity, as most birds in this phase lack this decoration); the feathers are long and

FIG. 317.



Buteo melanoleucus. Foot of adult female. One-half natural size.

silky in character and each is crossed by seven or more wavering bars or lines of pale ashy brown; the tail-coverts nearest the body are like the rest of the under surface, but the posterior half of these feathers, which are so long as to reach nearly to the ends of the outer rectrices, are barred heavily and evenly black and white; the thighs are barred like the rest of the under surface with narrow, pale, wavering lines of brownish ash.

There appear to be no detailed field notes as to the color of the bill, cere, iris or feet and legs of this hawk.

Adult female: No. 7885 P. U. O. C., Halliday's Ranch, southeastern Patagonia, 15th June, 1896, J. B. Hatcher.

Similar to the adult male in color, but much larger in every way; the greater coverts smoky blue-black, immaculate; the breast band and interscapular region without the white tips to the points of the dark feathers;

FIG. 318.



Buteo melanoleucus. P. U. O. C. 7886. Immature plumage. One-fifth natural size.

all the smoky blue-black color deeper in tone and richer, nearer to black. Length 32.00; wing 25.0; tail 13.0 inches.

Young of the year and immature birds: No. 7886, P. U. O. C., Coy Inlet, Patagonia (southeastern), 12 November, 1896, J. B. Hatcher. Gen-

eral color reddish brown, cinnamon and white or buff. The feathers of the crown and back of the head white, with their lanceolate tips deep seal-brown, not wholly concealing the underlying color; sides of the face and a more or less distinct line back of the eye buffy white, the former streaked with deep seal-brown; the back and upper surface in general a mixture of deep seal-brown, the feathers edged and marked irregularly with rusty reddish, and on the upper tail-coverts vermiculated on the outer webs with cinnamon-brown; the lesser and median coverts similar to the rest of the upper surface, the greater series seal-brown, with ashy barring on the outer webs and vermiculation of white and buff and ashy grey on the inner webs; the quills much as in the adult; the tail above deep ashy grey, with vermiculation and obscure barring in dull seal-brown; seen from below, the tail is dull seal-brown, heavily marked and vermiculated with ashy white and grey; the breast and throat are strongly cinnamon with heavy deep seal-brown arrow-shaped markings; the abdomen is deep seal-brown, with buffy marks and barring more or less distinct; the thighs are barred about evenly deep seal-brown and bright cinnamon; the under tail-coverts are barred evenly deep seal, pale cinnamon and white; they are relatively shorter than in the adult.

Geographical Range.—Chili, Tierra del Fuego, the whole of Patagonia, and the eastern part of Brazil and northern South America to Colombia.

This is one of the conspicuous birds of the Patagonian region and is commonly known as the eagle; it was noted by the naturalists of Princeton at various points in southern Patagonia, near to and away from the coast, and both the old and immature plumages of the bird are represented in the collections made by Mr. Hatcher. These birds, together with specimens from Chubut, from the Museo de La Plata, form the basis of the present descriptions, to which the series of birds in the British Museum of Natural History have also contributed.

The birds do not appear to be migratory at any point in their range and have been secured at the Straits of Magellan or in the vicinity at all seasons of the year. In the Chupat Valley they breed in November and December. Doering says they breed upon the banks of the Rio Negro upon the ground, but on some elevated place; Barrows thought the birds he became acquainted with bred on cliffs in the hills of northern Argentina, but did not absolutely see the nest.

In Uruguay, Aplin refers to it as follows (Ibis, 1894, pp. 194-195):

"Doubtless a resident, as, although I did not actually find it breeding, I was told that eggs were sometimes taken, and I saw examples at all seasons during my residence in the country; they were, however, certainly more numerous at the end of summer and in autumn. The fully adult bird has the upper parts grey, barred indistinctly on the wings and tail with a darker lead-grey; breast grey, with each feather tipped with white; belly pure white."

BUTEO POLIOSOMA (Quoy & Gaimard).

Falco polyosome, Quoy & Gaim. Voy. Uranie, Ois. p. 92, pl. 14 (1824: Falkland Islands).

FIG. 319.



Buteo poliosoma. Adult male. Chili. From bird in American Museum.
About one-fifth natural size.

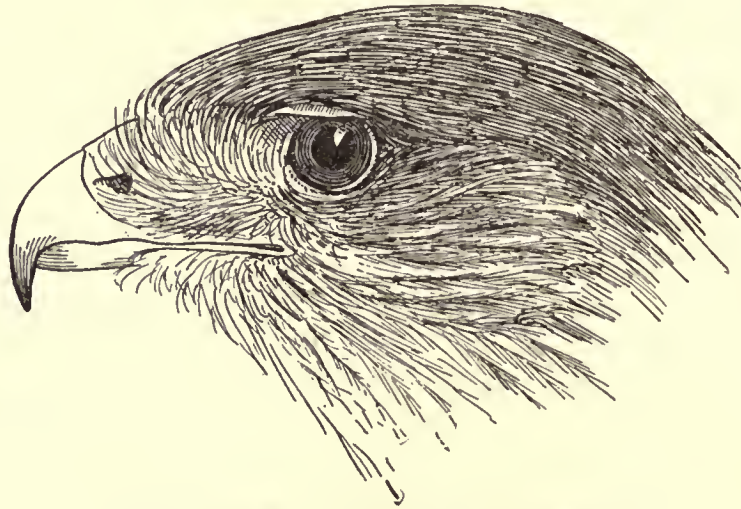
Buteo polyosoma, Less. Voy. Coq. Zool. I. p. 616 (1826: Falkland Is.);
Des Murs in Gay's Hist. Chil. Zool. I. p. 219 (1847).

Astur polyosoma, Cuv. Règn. Anim. I. p. 332 (1829).

Buteo poliosoma, Abbott, Ibis, 1861, p. 151 (Falkland Islands, breeds in Oct.); Phil. & Landb. Cat. Av. Chil. p. 3 (1868); Scl. & Salv.

Nomencl. Av. Neotr. p. 119 (1873: Falkland Is. and Patagonia); Sharpe, Cat. B. Brit. Mus. I. p. 171 (1874: Port Famine, South Patagonia: Falkland Is.), Gurney, Ibis, 1876, p. 69; id. List Diurn. B.

FIG. 320.

*Buteo poliosoma.* Adult male. Natural size.

Prey, p. 70 (1884); Burm. Ann. Mus. Nac. Buenos Aires, III. part x, p. 241 (1888: Patagonia: Straits of Magellan; Falkland Is.); Oust. Miss. Scient. Cap Horn, Oiseaux, pp. 22, 324 (1891: Orange Bay, June: Beagle Canal, Aug.); Sharpe, Hand-List B. I. p. 255 (1899); Martens, Hamb. Magalh. Sammlr. p. 5 (1900: Tierra del Fuego: Falkland Is.).

GENERAL DESCRIPTION.

Size.—Adult male.

Total length, about 22.50 inches.

Wing, 15.5 inches.

Culmen, 1.5 inches.

Tail, 8.0 inches.

Tarsus, 3.5 inches.

Color.—*Adult male.*—General color: Lead-color throughout, except on the tail-coverts and the tail, which are white with dark markings.

Head: Bluish lead-color, lighter than on the back; lores and ear-coverts still lighter, approaching white.

Neck: Bluish lead-color, whitening on the throat and chin.

Back: Interscapular region and lower back darker bluish lead-color; the rump shading to white and the upper tail-coverts pure white; both regions crossed with narrow bars of slaty grey and the rump sometimes mottled with that shade.

Tail: White of the purest tone; crossed by eight or more wavering, narrow, slaty grey bars and by a broad sub-terminal band of slaty blue-black, terminating in a band a third as wide as the last, pure white.

Wings: Primaries blackish, the external exposed surfaces frosted with silvery slate; white at base of inner web, with markings and bars of bluish slate; the secondaries bluish lead-color like the back, and tipped faintly with silvery grey, almost white; all the upper wing-coverts darker bluish lead-color like the interscapular region; lower wing-coverts and axillaries lighter slate.

Lower parts: Bluish lead-color; pale on the throat and chin, darkest on the chest and breast and again light about the abdomen in the region of the vent; the lower tail-coverts white, pure in tone, with some mottlings and many narrow, wavering bars of pale grey slate; the thighs light slate, barred finely with a darker shade.

There appear to be no field notes available to indicate the color of the bill, the cere, the irides, or feet and legs, as they look in life.

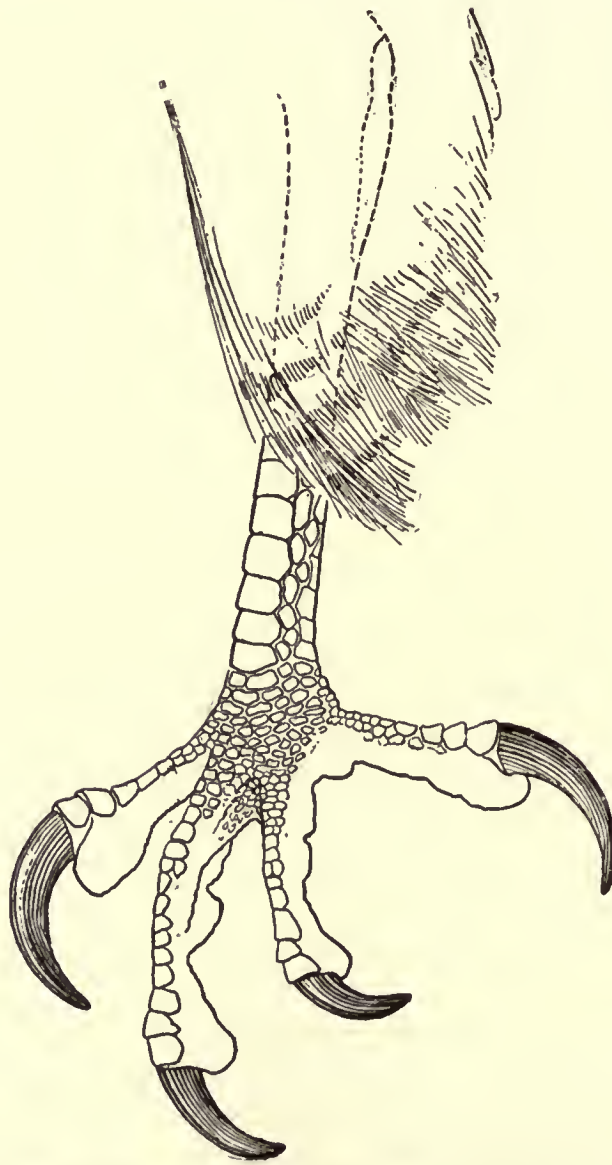
The female adult does not differ from the male in appearance, but is a little larger; length 23.50; wing 17.00; tail 10.00 inches.

No immature birds or young of the year have been available for study and description.

Geographical Range.—Southern Patagonia, the Straits of Magellan region, the whole of Tierra del Fuego and the Falkland Islands.

This is one of the rarer birds of prey even in the region where it occurs and there are but few specimens, probably less than thirty all told, in the great museums of the world, and recent accounts of the life history of this hawk are entirely lacking. It was not encountered by the naturalists sent out by Princeton to Patagonia. That it is a close ally of *Buteo erythronotus* is apparent and it is not impossible that future study may show relationships which will prove the specific identity of the two forms.

FIG. 321.

*Buteo poliosoma*. Foot of adult male. Natural size.

BUTEO ERYTHRONOTUS (King).

Haliaetus erythronotus, King, Zool. Journ. III. p. 424 (1827: Port Famine).

Aquila braccata, Meyen, Beitr. p. 65 (1834).

Buteo tricolor, D'Orb. Voy. Amer. Mérid. p. 106, pl. 3, figs. 1, 2 (1835: Rio Negro and coast of Patagonia); id. et Lafr. Syn. Av. p. 6 (1838); Burm. Reise La Plata, II. p. 436 (1861: Mendoza: Tucuman); C.

- Burm. An. Mus. Nac. Buenos Aires, III. part X. p. 241 (1888: Northern Patagonia), part XI. p. 315 (1890: Rio Chico del Chubut).
- Buteo varius*, Gould, P. Z. S. 1837, p. 10 (Santa Cruz, Patagonia); Darw. Voy. Beagle, Birds, p. 26 (1841: Straits of Magellan, Feb.; St. Julian, Jan.); Cass. U. S. Expl. Exped. p. 92, pl. 3, fig. 1 (1858: Patagonia); Gould, P. Z. S. 1859, p. 94 (eggs described); Scl. P. Z. S. 1860, p. 384 (Falkland Is.).
- Buteo unicolor*, D'Orb. et Lafr. Syn. Av. p. 7 (1837).
- Buteo erythronotus*, Gould, Voy. Beagle, Birds, p. 26 (1841: Chiloe and Falkland Islands); Fraser, P. Z. S. 1843, p. 109 (Chili, in the open parts of the country); Des Murs in Gay's Hist. Chil. Zool. I. p. 215 (1847); Hartl. Naum. 1853, p. 220 (Chili); Gould, P. Z. S. 1859, p. 93 (Falkland Is., eggs described); Scl. P. Z. S. 1860, p. 384; id. Ibis, 1860, p. 25, pl. i, fig. 3 (egg); Abbott, Ibis, 1861, p. 151 (East Falkland Is., Common, breeds in October); Phil. and Landb. Cat. Av. Chil. p. 3 (1868); Scl. and Salv. Ibis, 1868, p. 188 (Sandy Point, Straits of Magellan); iid. Ibis, 1869, p. 284 (Fox Bay, W. Falklands, Jan.); Cunningh. Nat. Hist. Str. Magell. p. p. 187, 299 (1871); Huds. P. Z. S. 1872, p. p. 536, 549 (Rio Negro); Leyb. Excurs. Pamp. Arjent. p. 56 (1873); Scl. & Salv. Nomencl. Av. Neotr. p. 119 (1873: Patagonia); Sharpe, Cat. B. Brit. Mus. I. p. 172 (1874: Falkland Is.; Straits of Magellan; Patagonia); Gurney, Ibis, 1876, p. 68; Durnf. Ibis, 1877, p. 38 (Ninfas Point, Chupat Valley, breeds in Nov.), 1878, p. 397, Central Patagonia, resident, breeds in Oct.); Gibson, Ibis, 1879, p. 411 (Cape San Antonio, June); Durnf. Ibis, 1880, p. p. 413, 427 (Tortugas, May); Scl. & Salv. Voy. Chall. II. Birds, p. 150 (1880: Falkland Is., eggs); Doering, Expl. al Rio Negro, Zool. p. 50 (1882: northern Patagonia); Salv. P. Z. S. 1883, p. 426 (Coquimbo); Gurney, List Diurn. B. Prey, p. 69 (1884); Barrows, Auk, I p. 109 (1884: Carline to Azul, April, plentiful); Tacz. Orn. Pérou, I. p. 115 (1884); Phil. Ornith. IV. p. 158 (1886: Cebollar); Withington, Ibis, 1888, p. 469 (Lomas de Zamora, not common, not observed to breed); Scl. & Huds. Argent. Orn. II. p. 62 (1889: Patagonia, abundant); Oust. Miss. Scient. Cap Horn, Oiseaux, pp. 28, 324 (1891: Punta Arenas, Feb.); Frenzel, J. p. O. 1891, p. 114 (Córdoba); Scl. P. Z. S. 1891, p. 135 (Tarapaca); Huds. Idle Days in Patag. p. 213 (1893); Aplin. Ibis, 1894, p. 194 (Uruguay); Hol-

land, Ibis, 1895, p. 216 (Argent. Rep., winter); Lane, Ibis, 1897, p. 179 (Cancosa); Schalow, Zool. Jahrb. Suppl. IV. p. 695 (1898: Pampa Tamarugal, Iquique, Aug.); Sharpe, Hand-l. B. I. p. 255 (1899); Salvad. Ann. Mus. Genov. (2) xx, p. 614 (1900: Santa Cruz, Jan., July, Aug.: Rio Pescado, May); Martens, Hamb. Magalh. Sammelr. p. 5 (1900: Patagonia: Falkland Islands); Carbajal, La Patagonia, Part II. p. 256 (1900); Albert, Contr. Estud. Av. Chil. II. p. 511 (1901).

Hypomorphuus leucurus, Lafr. Rev. Zool. 1849, p. 388.

Pœcilopternus erythronotus, Kaup, Contr. Orn. 1850, p. 76.

Buteo bracchatus, Pelz, Verh. z. b. Ges. Wien 1862, p. 142: id. Reise Novara, Vög. p. 6 (1865: Chili).

Buteo polyosoma, Schl. (nec Q. & G.), Mus. Pays-Bas, II. Buteones, p. 12 (1862: Falkland Islands).

Buteo albicaudatus, Schl. & Salv. (nec Vieill.) P. Z. S. 1873, p. 186 (Cosnipata); Durnf. Ibis, 1877, p. 187 (Buenos Aires, common resident).

Buteo albigula, Phil. Vog. Chil. Arch. Naturg. 1899, p. 169 (Chili).

Buteo (Asturina) elegans, Phil. tom. cit. p. 169.

(Inasmuch as the specimen from Tierra del Fuego mentioned by Cassin in the U. S. Expl. Exp., p. 94, as *B. ventralis*, and still preserved in the U. S. National Museum, seems undoubtedly to be a young *B. erythronotus*, it seems reasonable to include all the following references under this species—W. S.)

Buteo ventralis, Gould, P. Z. S. 1837, p. 10 (Santa Cruz, Patagonia): id. Voy. Beagle, Birds, p. 27 (1841); Gray, Cat. Accipitr. Brit. Mus. p. 18 (1844); Des Murs in Gay's Hist. Chil. Zool. I. p. 218 (1847); Cass. U. S. Expl. Exp. p. 94, pl. iii, fig. 2 (1858: Patagonia: Orange Bay, Tierra del Fuego); Phil. & Landb. Cat. Av. Chil. p. 3 (1868).

Phalcobæus montanus, Fraser, P. Z. S. 1843, p. 108 (Andes of Chili, from 5,000 to 8,000 feet).

Buteo montanus, Sharpe, Cat. B. Brit. Mus. I. p. 189 (1874: Santa Cruz, Patagonia); Burm. An. Mus. Nac. Buenos Aires, III, part X, p. 241 (1888: Santa Cruz).

Buteo borealis, Oust. Miss. Scient. Cap Horn, Oiseaux, pp. 253, 324 (1891: Santa Cruz, Patagonia).

Buteo borealis subsp. *montanus*, Martens, Hamb. Magalh. Sammelr. p. 6 (1900: Santa Cruz, Patagonia).

In considering a large series of skins of *Buteo erythronotus*, it is apparent that they may be divided into five distinct plumages which may be discriminated as adult and, if by this we mean breeding birds, there are

FIG. 322.



Buteo erythronotus. Adult male. P. U. O. C. 8307. One-fourth natural size.

three plumages in which the birds breed; a fourth plumage is the normal immature and young birds of the year, while a bird collected by Mr. Hatcher, which can only be described as black, must be a dimorphic, or dichromatic phase; this seems unusual and has not been heretofore dealt with; as to age it appears to be an adult.

Two of the plumages in the adult stage seem to fairly correlate with the sex of the birds, the adult male with clear slate color prevailing, the adult female with a more or less rusty red back and otherwise much like the male; the third phase is that of adult birds that are nearly similar in appearance, and while having the rusty back of the oldest females, are more heavily barred and often rusty beneath; in this dress the sexes are alike or nearly alike, allowing for individual variation. The fourth plumage presented by these birds correlates strictly with age. Of the fifth, or dimorphic form, the material at present to hand does not warrant generalization.

These five presentations of this hawk are given below in all detail and as field notes made by the naturalists from Princeton, who collected most of the series, are available, we are in position to have precise ideas as to the appearance of *Buteo erythronotus*.

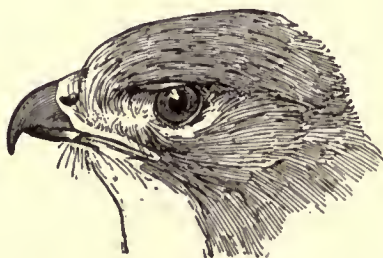
GENERAL DESCRIPTION.

Size.—No. 8307, adult male. P. U. O. C., Rio Chico, Patagonia, 10 March, 1898.

Total length, about 20.50 inches.

Wing, 14.12 inches.

FIG. 323.



Buteo erythronotus. Adult male. P. U. O. C. 8307. About one-half natural size.

Culmen, 1.2 inches.

Tail, 8.0 inches.

Tarsus, 3.25 inches.

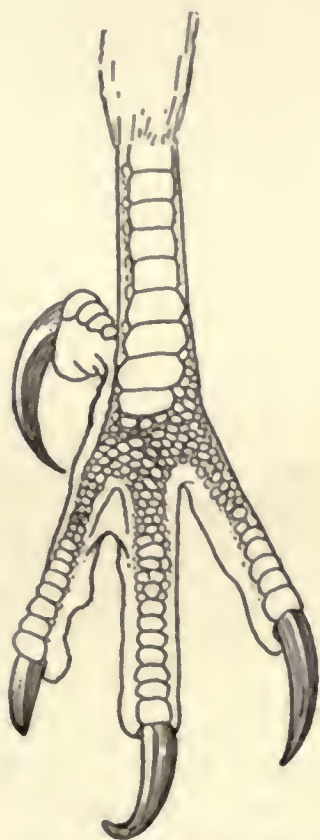
Three males in the perfectly adult plumage, all from Patagonia, do not differ much in measurements; the longest wing is just under 15 inches and the smallest is given above. These three birds are of almost exactly the same length.

Color.—Adult male cited above.

Head: Each feather with a black shaft making a hair-line. Clear, cold slate above; the forehead, lores and cheeks white, the cheeks streaked with slaty.

Neck: Above clear slaty, the feathers with the shafts black as on the crown, making a hair-stripe; chin and throat pure white.

FIG. 324.



Buteo erythronotus. Detail of foot from in front. P. U. O. C. 8307. Natural size.

FIG. 325.



Buteo erythronotus. Detail of foot from side. P. U. O. C. 8307. Natural size.

Back: Interscapular region and lower back clear slate, the feathers with black hair-line shafts; rump shading into white, with slate bars to each

feather and the upper tail-coverts, like the rump, white barred with slate, except the outer ones, which are immaculate.

Tail: White; crossed by nine or more wavering bars of ashy slate, with a subterminal band of black an inch wide and a terminal white bar half an inch wide. Seen from below, the tail is immaculate, save for the broad subterminal band of black.

Wings: Four outer primaries with the inner webs distinctly emarginate. The primaries black at their extremities for from two to three inches, the exposed outer web shaded throughout with silvery grey, and the inner webs, for all but the extremities, ashy, shading into pure white and barred with eight or more definite dark ashy bars; the secondaries slaty, like the interscapular region, with rather broad white tips, an obscure subterminal band and eight or more obscure bars of deep ash; the inner secondaries not tipped with white; all the coverts slaty-grey, clear in tone like the back, with black lines down the center from the black shafts and obsoletely barred and marked with deep ash; scapulars like the back; under wing-coverts white, with narrow ashy barring at wide intervals; the axillaries more strongly barred with clear slate, which color predominates here.

Lower parts: All pure silvery white; on the sides faint barring of clear slate, otherwise immaculate; *no barring on the thighs or under tail-coverts.*

Bill: Slate horn-color (Hatcher).

Cere: Dark yellowish green (Hatcher).

Iris: Deep hazel-brown (Hatcher).

Feet: Feet and legs bright yellow (Hatcher).

Adult female, P. U. O. C. 7947. Arroyo Eke, near Cape Fairweather, Patagonia, 16 May, 1898. A. E. Colburn.

Size.—Length, 24.00 inches; wing, 16.25 inches; culmen, 1.50 inches; tail, 9.50 inches; tarsus, 3.75 inches.

Color.—Similar to the adult male, but the slate is darker and more shaded with brownish. The upper neck and whole interscapular region and some of the shorter scapulars bright rusty red, the feathers slightly tipped with slate and hair-lined down their centers by the shining black shafts. The white of the lower parts barred in wavering lines with deep ash, as are the exterior upper tail-coverts.

Mr. Hatcher collected two specimens. No. 7868 P. U. O. C. is labelled ♂? and was taken at or near Coy Inlet, Patagonia, September 16, 1896 (J. B. Hatcher). It measures far under the standard of the smallest

females (length 20.90; wing 14.60), and there can be little doubt that it is a male. The other bird also labelled male is a little larger, but still far under the standard of the female (21.00 length; wing 15.20), was taken at Punta Arenas, Chili, on December 24, 1897, by Mr. Hatcher (P. U. O. C. 7869).

This latter bird has faint traces of rusty red on a very few of the feathers of the upper back and is, except for a few faint wavering bars across the abdomen, like the adult male described above. No. 7868 is even more typical of the very adult male, in the silvery slate of the upper parts and the almost immaculate lower surface, but on the interscapular region there is a small but very appreciable area of bright rusty red.

These two males are of interest as being intermediate in plumage between two males and the female adult stage, these latter males have more rusty on the back, while they approach the immature and young of the year in the plumage of the lower parts. At the risk of some confusion, these birds may be considered here. No. 7867 was taken at Coy Inlet, Patagonia, 15 October, 1896, J. B. Hatcher; and No. 7870 on the Pacific Slope of the Cordillera, Patagonia, 12 March, 1897, J. B. Hatcher.

The bird taken near Coy Inlet, No. 7867, is in detail as follows:

Head: The crown deep seal-brown, each feather margined more or less definitely with rusty and cottony white at the base; lores and forehead, as well as the sides of the face, isabelline, the feathers with black shafts, giving a fine streaked look; a defined moustachial streak reaching from the lower mandible to below and well back of the ear-coverts, deep seal-brown.

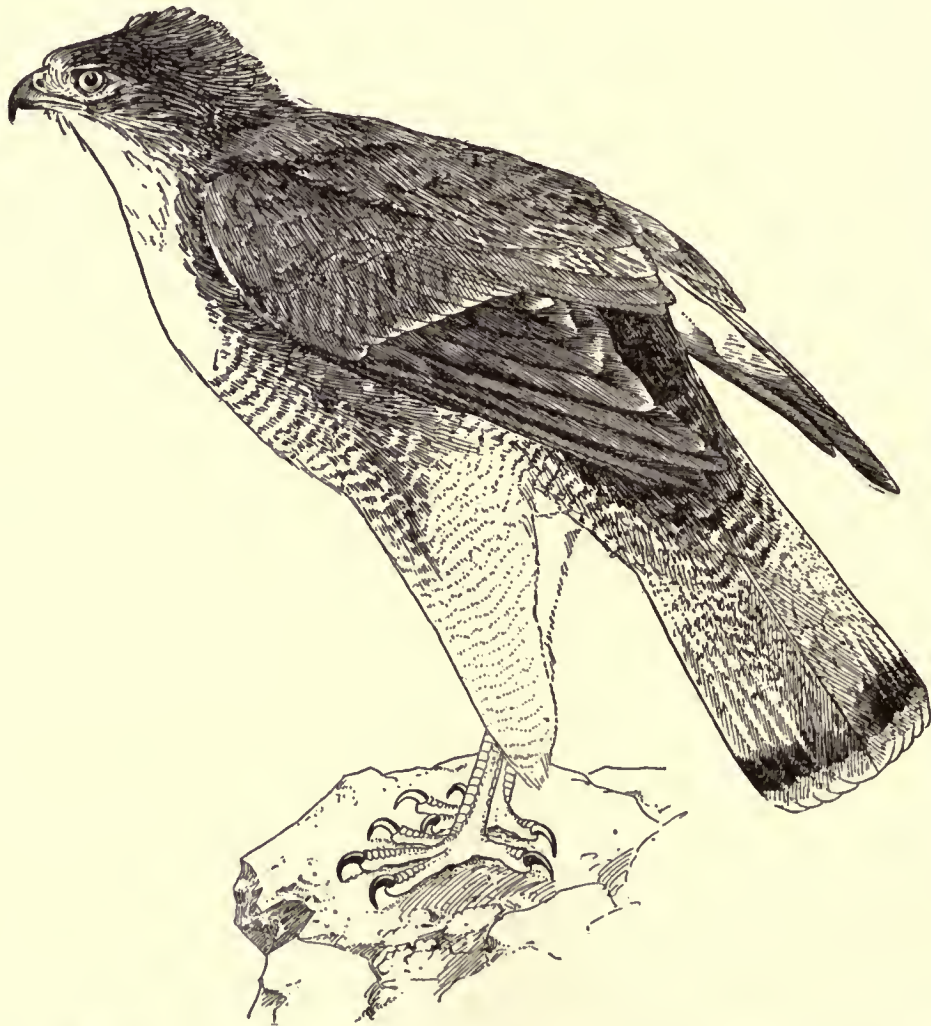
Neck: Above and on the sides rusty red, the feathers of the nape with arrow-shaped markings of deep seal-brown; chin, throat and lower neck white, somewhat obscured with very pale buff.

Back: Interscapular region rusty red; lower back and rump rusty red, barred broadly with deep seal-brown; upper tail-coverts white, with wavering cross bars of deep seal-brown or rusty.

Tail: White; the outer webs inclining to slaty, obscurely barred and vermiculated with slaty brown; the inner webs more distinctly white and crossed by many wavering bars of dusky slate; an obscure subterminal band of dusky slate and broad tips of white; the inner webs of the two central feathers are vermiculated with dusky slate, except terminally, where the barring appears. Seen from below, the closed tail is immaculate white, with a subterminal narrow obscure bar of dusky slate.

Wings: Primaries dull seal-brown at their extremities, barred at intervals with broad bars of deeper seal; the exposed outer webs washed with slaty; the inner webs white, almost immaculate; secondaries pale ashy brown on their exposed surfaces, barred with deep seal-brown and washed

FIG. 326.



Buteo erythronotus. Immature male. P. U. O. C. 7870. About one-fourth natural size.

with slaty; they are broadly tipped with white and the inner webs are like the outer at the tip end but soon become pure white, clearly barred with deep seal-brown; the scapulars rusty like the back and marked and spotted with deep seal-brown; the coverts deep seal-brown, margined with rusty red and some of the median series slaty, with deep seal barring

and rusty margins and edges; the whole of this part of the wing appears mottled slaty, seal and clear rusty red; lower wing-coverts and axillaries white, barred with clear rusty red and with some bars clearly double in color, a line of rusty and a line of deep seal-brown conjoined into a narrow bar; a few of the terminal under wing-coverts have clear slate bars.

Lower parts: The chest and upper breast clear buffy white; the rest of the under surface buffy white, barred clearly and definitely with bright rusty red; this becomes faint and obsolete on the vent and almost disappears on the under tail-coverts, which are buffy white; on each side of the breast there is an area of clear rusty red, the feathers being so heavily, but irregularly, marked with that color on a buff white ground, as to form a band; the sides and flanks as well as the thighs are buffy white, clearly barred with bright rusty red.

Bill and cere: Horn-blue (J. B. Hatcher).

Feet: Feet and legs bright yellow (J. B. Hatcher).

Iris: Pale yellow-brown (J. B. Hatcher).

The other bird, No. 7870, is similar, but the colors are better defined; the crown is deep seal-brown; the moustachial streak almost black; the red of the back and scapulars is brighter and the mottling on these feathers is deep seal-brown; the markings on the tail are more definite; seen from above, the subterminal band is more definite than in 7868; the barring and shading of the feathers is clearer; from below, the tail is clear white, with a broad subterminal band (three-fourths of an inch) black and a terminal band of white of about the same width; the throat is buffy white and the breast and chest rusty white; the barring beginning on the lower breast is very clear deep seal; this is on the breast suffused by the rusty, but bars on the abdomen, flanks and thighs are on a pure white ground and clear; the under tail-coverts are rusty, barred with a deeper rusty shade; "eye bright yellow" (J. B. Hatcher); bill blue-horn and feet and legs dull green-yellow (J. B. Hatcher).

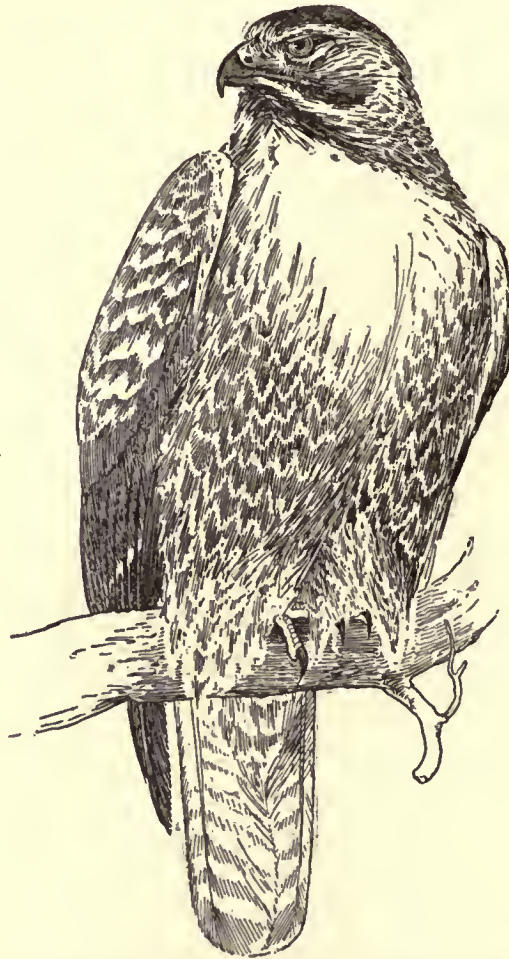
Immature birds and young of the year.—No. 7864, male juv., P. U. O. C. Rio Chico, Cordilleras of Patagonia, 18th March, 1897, J. B. Hatcher.

Head: Top of head dark seal-brown; the lores and forehead white; region behind the eye and ear-coverts deep buff, with narrow dark brown stripes; cheeks dark seal-brown, forming a distinct moustache; the feathers of the crown with cottony white bases.

Neck: Deep buff on throat and under neck; the throat heavily streaked

with seal-brown, the under neck immaculate; the nape and sides of the neck deep seal-brown; all the feathers margined and bordered with deep buff.

FIG. 327.



Buteo erythronotus. Immature, P. U. O. C. 7864. About one-fourth natural size.

Back: Interscapular region, back and upper tail-coverts deep seal-brown, the feathers margined, tipped and mottled with deep buff.

Tail: Ashy grey above; crossed by fifteen or more ashy brown bars (one-fourth inch wide) and with a subterminal bar of double width; tipped broadly with buffy brown. From below, the tail is ashy white, with obsolete barring of dull slate, the terminal band much as from above and the subterminal bar more than double the width of any of the others and the same in color.

Wings: Primaries and primary coverts deep seal-brown, more or less

shaded with slaty grey, hoary in character, and crossed with many deeper seal-brown bars; the primaries become white on their inner webs for two-thirds of their length, and this color is not marked in any way after it loses the brown terminal region; secondaries much like the primaries in shade and color, rather more heavily barred, tipped with deep buff, and the white region of the web barred with seal-brown; the rest of the upper wing-

FIG. 328.



Buteo erythronotus. Dark plumage. P. U. O. C. 7865. About one-fourth natural size.

coverts much like the interscapular region, deep seal-brown, tipped, margined and mottled with deep buff; under wing-coverts deep buff, inclining to rufous, with barring of deep seal-brown; axillaries paler buff, marked and barred heavily with deep seal-brown.

Lower parts: Deep tawny buff; streaked on the chin and upper throat with deep seal-brown; center of the upper breast immaculate, the sides

streaked like the throat; the rest of the breast streaked and spotted with arrow-shaped marks of deep seal-brown; abdomen not so definitely marked with brown, which here is shaded with rufous; the thighs and under tail-coverts deep buff, inclining to rusty, and marked with triangular-shaped barring of rusty brown, bright in tone.

"Bill horn-blue; iris dark brown; feet and legs yellowish-green" (J. B. Hatcher).

Dark phase.—Male. No. 7865 P. U. O. C. Pacific Slope, Cordilleras of Patagonia, 16 March, 1897. J. B. Hatcher.

The prevailing color throughout on the body is chocolate or deep seal-brown; this is shaded on the back with tawny, on the wings, which are barred on all the coverts and quills obsoletely with deeper shades, with slate-grey, hoary in character; there is also some rufescent shading on the very dark, immaculate under surface; the tail is slate-grey from above and pale silvery grey from below, crossed by sixteen or more narrow wavering bars of deep brown; the tail is broadly tipped with pale slate frosted with white. "Eye light brown; bill blue horn-color; feet and legs yellow" (J. B. Hatcher). Length 20.00; wing 14.90.

Geographical Range.—From just south of Buenos Aires throughout Patagonia, northern Tierra del Fuego and the Falkland Islands; the Straits of Magellan and north on the Pacific Coast into Peru.

This hawk appears to be resident where it occurs and to be one of the conspicuous elements in the bird fauna of Patagonia. It breeds in October and November, and as its range is extended by our present knowledge into the forests of the Cordilleras as well as on the more open pampas and plains, to very high altitudes, we may conclude that the time of breeding varies considerably with the range. The birds nest in trees and low bushes as well as upon cliffs, but it seems improbable that they nest at any point in "long grass" upon the ground, as suggested by Mr. Holland, in notes appended. Birds of this genus, notably *Buteo borealis*, we are well aware, adapt themselves to local conditions so as to depart from inaccessible nests in high trees, to nests in bushes or low trees so near the level of the ground as to be easily examined without even climbing, the investigator being well able to see all that is inside the structure, while standing on the ground. But, so far as we have data we are unable to get records of the nest of any kind of *Buteo* directly on the ground.

The variation in plumage in this hawk has long been known and has been dwelt on by those who have observed the birds. There has been, so far as we can discover, no detailed account of the dark phase discussed in this connection from material taken by Mr. Hatcher. There is in the Princeton Museum a bird (No. 8671) that nearly approaches No. 7865, from the Cordilleras of Patagonia. It was collected by S. Pozzi, in the La Plata region near Buenos Aires, and is labelled *Buteo albicaudatus*, ♀, needless to say an error in identification. While the bird is not so definitely dark on the lower surface, the black of the throat and breast shading into white about the vent, yet the upper parts are dull deep brownish-black throughout. The tail is much as in the dark bird already described.

All the birds here considered have been carefully compared with the material in the British Museum and the descriptions are wholly based on birds procured by the naturalists sent out by Princeton, who were fortunate enough to obtain material extending our knowledge of the appearance of this hawk, as well as to get all the heretofore known plumages.

A. H. Holland, in his account of the Birds of Estancia Sta. Elena (Ibis, p. 216, 1895) says of this species: "A common hawk here at all seasons, often seen in company with *C. cinereus*, and beating up its prey from bushes and weeds in much the same way. Its stoop is more powerful, and its longer breadth of wing enables it to fly with more despatch and in a sailing manner. It breeds in the long grass, but, so far, I have not discovered its nest."

Hudson in "Idle Days in Patagonia," 1893, pp. 212-214, describes its habitat as follows: "On arriving at a hill, I would slowly ride to its summit, and stand there to survey the prospect. On every side it stretched away in great undulations; but the undulations were wild and irregular; the hills were rounded and cone-shaped, they were solitary and in groups and ranges; some sloped gently, others were ridge-like and stretched away in league-long terraces, with other terraces beyond; and all alike were clothed in the grey everlasting thorny vegetation. How grey it all was! hardly less so near at hand than on the haze-wrapped horizon, where the hills were dim and the outline blurred by distance. Sometimes I would see the large eagle-like white-breasted buzzard, *Buteo erythronotus*, perched on the summit of a bush half a mile away; and so long as it would continue stationed motionless before me my eyes would remain involuntarily fixed on it, just as one keeps his eyes on a bright light shining in the gloom; for the whiteness of the hawk seemed to exercise a fasci-

nating power on the vision, so surpassingly bright was it by contrast in the midst of that universal unrelieved greyness."

BUTEO SWAINSONI, Bonaparte.

Buteo swainsoni, Bonap., Geogr. and Comp. List, p. 3 (1838); Scl. & Salv. Nomencl. Av. Neotr. p. 119 (1873); Gurney, Ibis, 1876, p. 234, id. List Diurn. B. Prey, p. 68 (1884); Scl. & Huds. Argent. Orn. II. p. 59, pl. xvi (1889); Sharpe, Hand-list B. I. p. 256 (1899).

FIG. 329.



Buteo swainsoni. Adult male. About one-fourth natural size. From a bird in the American Museum.

Buteo obsoletus, Sharpe, Cat. B. Brit. Mus. I. p. 184 (1874: Patagonia);
Burm. An. Mus. Nac. Buenos Aires, III, part X, p. 241 (1888: Patagonia);
Martens, Hamb. Magalh. Sammelr. p. 6 (1900: Patagonia);
Albert, Contr. Estud. Av. Chil. II. p. 516 (1901).
Buteo pictus, Phil. Voy. Chil. Arch. Naturg. 1899, p. 169.
Buteo macronychus, Phil. tom. cit. p. 168.

GENERAL DESCRIPTION.

Size.—Adult male.

Total length, about 20.00 inches.

Wing, 15.7 inches.

Culmen, 1.0 inch.

Tail, 8.7 inches.

Tarsus, 2.8 inches.

There is a very considerable variation in size in different adult male birds; this one given is rather large.

FIG. 330.



Buteo swainsoni. Adult male. Natural size.

Color.—Adult male.

Head: Forehead white; crown, sides of head and face deep greyish brown, the feathers cottony at their bases.

Neck: Chin and throat white, the color terminating abruptly on the chest and forming a white patch; rest of the neck like the head, but a little lighter on the nape.

Back: Interscapular region, back, rump and upper tail-coverts uniform greyish brown.

Tail: Dull greyish brown, often inclining to hoary, and crossed by nine or ten darker bars, which become obsolete at the base of the feathers; the

subterminal bar is broader than the others; the terminal bar is lighter and often shaded with buffy.

Wings: *Only the outer three primaries with inner webs distinctly emarginate*; uniform greyish brown throughout like the back; the feathers of the shoulders often with paler margins.

FIG. 331.



Buteo swainsoni. Foot of adult male. Natural size.

Lower parts: The chin and throat forming a white patch; chest and upper breast uniform bright rufous or cinnamon, making a distinct band; remainder of the lower parts buffy white, sometimes spotless, but generally barred and marked with rusty brown; the under tail-coverts are usually immaculate buffy white but are frequently faintly barred with rusty brown.

Bill: Horn-blue, with a yellowish cere.

Iris: Light pale brown.

Feet and legs: Yellowish, with olive shading.

Adult female: Very much like the adult male, but with less white on the forehead; the chest band greyish brown instead of cinnamon and concolor with the back; all the colors duller or deeper. Notably larger in size. Length 22.00; wing 17.00 inches.

FIG. 332.



Buteo swainsoni. Adult female. About one-fourth natural size. From a bird in the American Museum.

Adult melanistic plumage; either sex: Whole plumage uniform dusky; the tail dusky with deeper bars, nine or ten crossing the subterminal one being broader than the others; in very dark individuals this is obsolete.

There is every possible gradation between this phase, which in its purest form is uncommon, to the normal adult dress.

Young of the year and immature birds: Above deep brown, the feathers margined and tipped with buffy brown; the head lighter, with a distinct supraciliary buffy line; the throat whitish and the rest of the lower parts buffy, deep in tone and splashed or marked with brown, nearly black; the tail is much as in the normal adult; the upper tail-coverts barred broadly

with blackish on a buffy white ground and the lower tail-coverts buffy, with narrow cross bars of dusky.

Geographical Range.—Western North America, more common west of the Mississippi, and ranging north into Alaska and the region west of Hudson Bay; south through Middle and South America; on the eastern side as far south as northern Patagonia.

FIG. 333.



Buteo swainsoni. Immature male. About one-fifth natural size. From a bird in the American Museum.

This does not appear to be a common bird in the Patagonian region and the records of it are but few, and these from the more northern parts of the province. The species was not noticed by the Princeton naturalists and the descriptions here given are based on birds in the University Museum from Western North America, and from a large series in the American Museum.

Genus HARPYHALIAETUS Lafresnaye.

Type.

Harpyhaliaetus, Lafr. Rev. Zool. 1842,

p. 173; Sharpe, Cat. Bds. Brit.

Mus. i. p. 221 (1874); Sharpe,

Hand-List Bds. i. p. 259 (1899). *H. coronatus*.

Urubitornis, Verr. P. Z. S. 1856, p.

145 *H. coronatus* var. (?) = *H. solitarius*.

Geographical Range.—South America, from Chili and N. Patagonia as far north as Veragua in Central America.

HARPYHALIAETUS CORONATUS (Vicillot).

Aquila coronada, Azara, Apunt. I. p. 56 (1802).

Harpyia coronata, Vicill. N. Dict. d'Hist. Nat. xiv, p. 237 (1817: ex Azara).

Falco coronatus, Temm. Pl. Col. I. pl. 234 (1823); D'Orb. Voy. Amér. Mérid. Ois. p. 75 (1835: Rio Negro, Patagonia).

Circaetus coronatus, Cuv. Règn. Anim. I. p. 328 (1829); Hartl. Ind. Azara, p. 1 (1847).

Harpyhaliaetus coronatus, Lafr. Rev. Zool. 1842, p. 173; Huds. P. Z. S. 1872, p. 536 (Rio Negro); Scl. & Salv. Nomencl. Av. Neotr. p. 119 (1873: Patagonia); Sharpe, Cat. B. Brit. Mus. I. p. 221 (1874: Patagonia); Gurney, Ibis, 1876, p. 490; id. List Diurn. B. Prey, p. 77 (1884); Scl. & Huds. Argent. Orn. II. p. 63 (1889); Oust. Miss. Scient. Cap Horn, Oiseaux, pp. 252, 324 (1891: Rio Negro, Patagonia); Sharpe, Hand-list B. I. p. 259 (1899); Carbajal, La Patagonia, Part II. p. 256 (1900); Albert, Contr. Estud. Av. Chil. II. p. 533 (1901).

Circaetus solitarius, Cab. & Tsch. Arch. fur Naturg. 1844, p. 264.

Asturina azaræ, Kaup, Isis, 1847, p. 209.

Thrasaetus coronata, Bp. Consp. Av. I. p. 29 (1850).

Urubitornis solitaria, Verr. P. Z. S. 1856, p. 14; Salv. Ibis, 1870, p. 214; Scl. & Salv. Nomencl. Av. Neotr. p. 119 (1873).

Asturina coronata, Schl. Mus. Pays Bas, II. Asturinæ, p. 12 (1862).

GENERAL DESCRIPTION.

Size.—Adult male.

Total length, about 33.00 inches.

Wing, 22.4 inches.

Culmen, 3.2 inches.

Tail, 13.6 inches.

Tarsus, 5.0 inches.

Color.—Adult male.

Head: Crown ashy brown; an occipital crest of long feathers much darker than the crown; a band behind the eye along the side of the head,

buffy white or whitish, each feather with a narrow dark median stripe; the sides of the head and face white, or isabelline, with ashy centers to the feathers; upper region of the ear-coverts immaculate ashy brown.

Neck: Whitish, or isabelline, with ashy centers to the feathers; darker above like the crown.

Back: Interscapular region ashy brown, with a decided chocolate suffusion and pearl-grey shading; upper back similar; rump and upper tail-coverts darker ashy brown, without the grey shading; the tail-coverts tipped broadly with white.

Tail: Black; the feathers are tipped with white and a broad white median band crosses them; the outer feathers show traces of a second white band near their bases.

Wings: Primaries black, shaded on their external edges with grey; secondaries grey, with an ashy tinge, with a broad subterminal bar of black and blackish mottling, each feather tipped with white; the inner secondaries and the remainder of the upper wing surface like the back; under wing-coverts clear pale grey, varied with white streaks and margins to the feathers; axillaries similar.

Lower parts: The entire under surface of the body immaculate ashy brown; the thigh feathers deep brown, shading to black toward the tarsal joint, with white margins to the feathers; the under tail-coverts ashy brown, with broad margins and tips of clear white.

Bill: Blue horn-color, shading to yellow at the base cere yellow.

Iris: Brown or reddish brown.

Feet: Feet and legs clear deep yellow.

The sexes do not appear to differ in either size or color.

Geographical Range.—From Veragua in Central America, southward to Chili and northern Patagonia.

The part of Patagonia in which this bird has been recorded was not entered by the naturalists sent out by Princeton, and we can therefore contribute little to the history of the species.

Subfamily, AQUILINÆ.

Sharpe, Cat. Birds Brit. Mus. i. p. 225 (1874); Sharpe, Hand-List Birds, i. p. 260 (1899).

Genus FALCO Linnæus.

Type.

- Falco*, Linn. S. N. Ed. X. i. p. 88 (1758); Sharpe, Cat. Bds.
 Brit. Mus. i. p. 374 (1874); Sharpe, Hand-
 list Bds. i. p. 273 (1899) *F. subbuteo*.
Tinnunculus, Vieill. Ois. Amér. Sept. i. p. 39 (1807) *F. columbarius*.
Hypotriorchis, Boie, Isis, 1826, p. 967 *F. subbuteo*.
Æsalon, Kaup, Naturl. Syst. p. 40 (1829) *F. regulus*.
Dendrofalco, Gray, List Gen. B. p. 3 (1840) . . *F. subbuteo*.
Lithofalco, Blasius *F. regulus*.
Gennaia, Kaup, Isis, 1847, p. 69 *F. jaggur*.
Chicquera, Bp. Rev. et Mag. de Zool. 1854, p. 535. *F. chicquera*.
Turumtia, Blyth, Ibis, 1863, p. 9 *F. chicquera*.
Rhynchofalco, Ridgway, Pr. Bos. Soc. Nat. Hist.
 1873, p. 46 . *Falco femoralis*, Temminck = *F. fusco-cærulescens*.
Geographical Range.—The entire world except Oceania.

FALCO CASSINI Sharpe.

- Falco peregrinus*, King (nec Tunst.), Zool. Journ. iii. p. 425 (1827: Port
 Famine); Des Murs in Gay's Hist. Zool. I. p. 224 (1847); Phil. &
 Landb. Cat. Av. Chil. p. 4 (1868); Ridgw. Proc. U. S. Nat. Mus.
 XII, p. 136 (1889: Elizabeth Isl.); Albert, Contr. Estud. Av. Chil.
 II, p. 540 (1901).
Falco nigriceps, Cass. U. S. Astr. Exp. p. 176, pl. xiv (1855).
Falco cassini, Sharpe, Ann. Nat. Hist. (4) XI, p. 223 (1873); id. Cat. B.
 Brit. Mus. I, p. 384 (1874: Straits of Magellan); Gurney, Ibis, 1882,
 p. 300; id. List Diurn. B. Prey, p. 107 (1884); Burm. An. Mus.
 Nac. Buenos Aires, III, part x, p. 241 (1888: Straits of Magellan);
 Sharpe, Hand-list B. I, p. 274 (1899); Martens, Hamb. Magalh.
 Sammelr. p. 6 (1900: Straits of Magellan); Salvad. Ann. Mus.
 Genov. (2) xx, p. 614 (1900: Possession Bay, July).

GENERAL DESCRIPTION.

- Size*.—Adult male. No. 7903 P. U. O. C. Coy Inlet, coast of Pata-
 gonia, 22 November, 1896. J. B. Hatcher, collector. Or. No. 279.
 Total length, 16.50 inches.
 Wing, 12.00 inches.
 Culmen, without cere, 0.75 inches; with cere, 1.00 inches.

Tail, 7.25 inches.

Tarsus, 1.90 inches.

Adult female. P. U. O. C. No. 7902, near Coy Inlet, coast of Patagonia, 19 October, 1896. J. B. Hatcher, collector. Or. No. 214. Total length, 21.00 inches; wing 13.90; culmen, without cere 1.00; with cere, 1.25; tail 7.90; tarsus 2.10.

FIG. 334.



Falco cassini. Adult male, P. U. O. C. 7903. Coy Inlet, Coast of Patagonia.
About one-fourth natural size.

Color.—Adult male cited.—Head: Forehead and a triangular spot in front of eye dull white; crown dull black, each feather margined and tipped with bluish lead-color so broadly as to almost conceal the dark, sagittate-shaped central portion of each feather; region above the eye and moustachial streak, as well the ear-coverts and cheeks, deep black, unshaded except that the ear-coverts show light edges to some of the feathers.

Neck: Above and on the sides like the crown, but the bluish lead-color does not prevail, showing only as a narrow edging to the dark feathers; chin, throat and lower neck pure white and immaculate.

Back: Interscapular region barred with black on a dull bluish lead-colored ground, the lighter shade prevailing over the dark because of the broad bluish lead-colored tips of each feather; there are three to four strong dark bars on each of the feathers of this region; on the middle and lower back the black bars are much narrower and farther apart and become sagittate in shape as the rump is reached; the rump and upper tail-coverts are light slate-color, with sagittate markings and bars, chiefly concealed, on each feather; the effect on the back is that of dark brownish black, shaded with bluish lead-color; that of the middle and lower back, as well as the rump and upper tail-coverts, light slate-blue with dark markings so narrow as not to affect the tone.

FIG. 335.



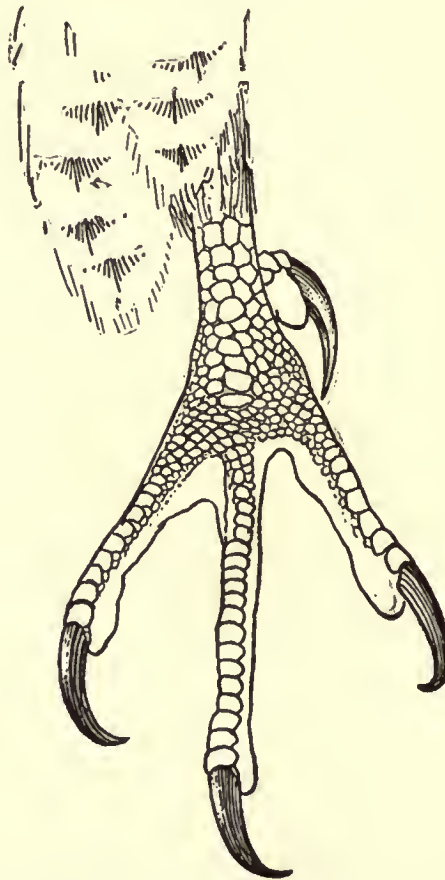
Falco cassini. Adult male, P. U. O. C. 7903. Natural size.

Tail: Bluish slate at base, shaded somewhat with ash toward the tip; the slate-blue of the wide interspaces at the base becomes less defined toward the end of the tail and shaded more or less with ashy, while the narrow black bars of the basal portion gradually widen till they are as wide as the interspaces toward the tip; each rectrix broadly tipped with fulvous. This tip is usually very much worn even in birds in otherwise perfect plumage, and this is due to the feeding habits of this hawk, the tail being pressed down on the dead duck or other prey, held in the strong talons.

Wings: Upper wing-coverts like the interscapular region in color and marking; from above, the quills are dull brownish black, with almost obsolete bars or spots of dull slate on most of these feathers; the inner

secondaries uniform with the color of the back; seen from beneath, the wing is pale whitish ash, definitely and regularly barred, except at the tips of the quills, with ashy brown, vermiculated on the inner webs more or less with the same shade.

FIG. 336.



Foot of *Falco cassini*; adult female, P. U. O. C. 7902. From in front; natural size.

Lower parts: Chin and throat immaculate white; upper breast immaculate white, save for the very narrow black shaft lines of some of the feathers and in some individuals a shading of cream-color on fawn; the rest of the under surface white or creamy white, with a decided shading of faint grey, each feather crossed with three or more narrow black bars, sometimes showing a tendency to arrow-shaped marks, this particularly in the mid-breast and on the flanks and feathered parts of the legs; the region about the vent is almost immaculate and the under tail-coverts, the axillaries and the under wing-coverts are barred like the rest of the lower surface.

Bill orange-yellow at base, shading into clear blue horn; cere orange-yellow.

FIG. 337.



Foot of *Falco cassini*; adult female, P. U. O. C. 7902. From the side; natural size.

Feet orange-yellow; the claws bluish black.

Iris dark hazel-brown.

The adult female cited above is colored like the bird just described; there is a stronger tendency to cream and buffy shades on the lower surface and the barring is stronger and less broken by sagittation on the feathers.

Young birds of the year and till they assume full plumage are very different in color from the adults and also appear to average a little larger in size.

Head: Forehead and feathers in front of eye whitish; crown deep blackish brown, the feathers more or less margined with chocolate or dull chestnut; feathers under the eye, the sides of the face, and a moustachial streak, not so wide as in the adult, deep black; ear-coverts shaded with buffy or chestnut.

Neck: Nape, hind neck and sides like the crown, the nape tinged with chestnut and the feathers all margined to a greater or less degree with the same shade; throat and chin deep creamy buff.

Back: Like the crown and neck in general color throughout, the feathers all margined with rufous, or chestnut, except on the rump and upper tail-coverts, where they are tipped definitely with buff.

Tail blackish, with a strong brown undertone; each rectrix is crossed with four or more indistinct grey bars, which shade into rufous on the inner webs; all the tail feathers tipped with deep creamy buff.

Wings: The upper wing-coverts like the interscapular region in color and margins; the quills, except the inner secondaries, blackish-brown, the inner webs notched or half barred with rufous; the inner secondaries like the back and tipped with buff.

Lower parts: Chin and throat as described, deep creamy buff, which changes on the breast to deep reddish brown, stronger on the breast and sides, paler on the abdomen and under tail-coverts; all the feathers medianally streaked with a long blackish spot, which becomes more prominent and arrow-shaped on the feathers of the flanks; *the lower surface presents a streaked, not a barred appearance*; the under wing-coverts and axillaries deep rufous, barred or mottled with blackish.

Bill: Dull greenish yellow, shading into bluish green at the tip; the cere dull greenish yellow.

Feet: Yellow; the claws brown.

Iris: Dark hazel-brown.

Geographical Range.—Chili, southern Patagonia and adjacent regions. The lands about the Straits of Magellan. Common in the province of La Plata, Argentina (W. H. Hudson).

Cassin's Peregrine was secured by Mr. Hatcher on the two occasions above cited and seems to be a fairly common bird throughout the Straits. It is the most destructive bird-hawk of the country it inhabits, feeding on ducks, herons and small species like doves and tinnamou. It breeds on the faces of cliffs in inaccessible places, its eyrie being used for many seasons, if not continuously, for it is rarely disturbed. There are no sets of eggs in the collection of the British Museum, but these are doubtless very like those of the other large peregrines.

Hudson, in his *Naturalist in La Plata* (pp. 95-96), says: "The wide-ranging peregrine falcon is a common species in La Plata, although, oddly

enough, not included in any notice of the avifauna of that region before 1888. The consternation caused among birds by its appearance is vastly greater than that produced by any of the raptors I have mentioned; and it is unquestionably very much more destructive to birds, since it preys exclusively on them, and, as a rule, merely picks the flesh from the head and neck, and leaves the untouched body to its jackal, the carrion-hawk. When the peregrine appears speeding through the air in a straight line at a great height, the feathered world, as far as one is able to see, is thrown into the greatest commotion, all birds, from the smallest up to species large as duck, ibis and curlew, rushing about in the air as if distracted. When the falcon has disappeared in the sky, and the wave of terror attending its progress subsides behind it, the birds still continue wild and excited for some time, showing how deeply they have been moved; for, as a rule, fear is exceedingly transitory in its effects on animals."

FALCO FUSCO-CÆRULESCENS Vieillot.

Alconcillo aplomado, Azara, Apunt. I. p. 175 (1802).

Alconcillo obscuro azulejo, Azara, tom. cit. p. 179.

Falco fusco-cærulescens, Vieill. N. Dict. d'Hist. Nat. XI. p. 90 (1817; ex Azara, p. 179); Fraser, P. Z. S. 1843, p. 109 (Chili); Sharpe, Cat. B. Brit. Mus. I. p. 400 (1874: east Patagonia); Oust. Miss. Scient. Cap Horn, Oiseaux, pp. 253, 324 (1891: Port Desire); Frenzel, J. f. O. 1891, p. 114 (Córdoba); Lane, Ibis, 1897, p. 180 (Vilugo); Sharpe, Hand-list B. I. p. 275 (1899); Martens, Hamb. Magalh. Sammelr. p. 6 (1900; east and central Patagonia).

Falco thoracicus, Licht. Verz. Doubl. p. 62 (1823: ex Azara, p. 175).

Falco femoralis, Temm. Pl. Col. I. pls. 121, 343 (1823: ex Azara, p. 179); Licht. Verz. Doubl. p. 61 (1823); D'Orb. Voy. Amér. Mérid. p. 116 (1835); Darw. Voy. Beagle, Birds, p. 28 (1841: Port Desire, Jan., breeding); Burm. Reis. La Plata, II. p. 437 (1861: Pampas near Rio Durato); Schl. Mus. Pays Bas, II. Falc. p. 20 (1862); Phil. & Landb. Cat. Av. Chil. p. 4 (1868); Burm. An. Mus. Nac. Buenos Aires, III, part X, p. 241 (1888: Patagonia), part XI, p. 316 (1890: Fortin Villegas).

Falco cyanescens, Vieill. Enc. Méth. III, p. 1234 (1823: ex Azara, p. 179).

Hypotriorchis femoralis, Gray, Gen. B. I. p. 20 (1844); Hartl. Ind. Azara, p. 3 (1847); id. Naum. 1853, p. 220; Pelz. Reis. Novara Vög. p. 8

(1865: Chili); Scl. P. Z. S. 1867, pp. 330, 338 (Chili); Scl. & Salv. P. Z. S. 1868, p. 143 (Conchitas, winter visitor), 1869, p. 155 (Tinta); Huds. P. Z. S. 1871, p. 260 (Patagonia), 1872, p. 536 (Rio Negro); Scl. & Salv. Nomencl. Av. Neotr. p. 121 (1873); Lee, Ibis, 1873, p. 131 (Arg. Rep., not common); Durnf. Ibis, 1877, p. 187 (Buenos Aires, winter visitor); 1878, p. 398 (central Patagonia, most numerous in winter, breeds in Nov.); Gibson, Ibis, 1879, p. 412 (Cape San Antonio, the only one observed in six years); Doering, Expl. al Rio Negro, Zool. p. 51 (1882: valleys of the Rio Colorado and Rio Negro, abundant); White, P. Z. S. 1882, p. 41 (Cosquin, Córdoba, July); Withington, Ibis, 1888, p. 470 (Lomas de Zamora); Carbajal, La Patagonia, part II. p. 256 (1900).

FIG. 338.



Falco fusco-cærulescens. Adult male, P. U. O. C. 7946. About one-third natural size.

Æsalon femoralis, Kaup, Contr. Orn. 1850, p. 54.

Hypotriorchis aurantius, Heerm. Proc. Acad. Philad. 1854, p. 177.

Hypotriorchis fusco-cærulescens, Gurney, Ibis, 1882, p. 158; id. List Diurn. B. Prey, p. 103 (1884).

GENERAL DESCRIPTION.

Size.—Adult male. P. U. O. C. No. 7946. Rio Chico de Santa Cruz, Patagonia, 11 March, 1898. A. E. Colburn, collector. Or. No. 296.

Total length, 14.50 inches.

Wing, 9.75 inches.

Culmen, without cere, 0.70 inches; with cere, 0.95 inches.

Tail, 7.10 inches.

Tarsus, 1.85 inches.

Adult female. P. U. O. C. No. 7900. Near Coy Inlet, Patagonia, 21 November, 1896, J. B. Hatcher. Or. No. 278.

Length, 17.00. Wing, 11.40. Culmen, without cere, 0.80; with cere, 1.10.

Tail, 7.80 (the tips are worn). Tarsus, 2.00.

FIG. 339.



Falco fusco-cærulescens. Adult male. P. U. O. C. 7946. Natural size.

Color.—Adult male cited.

General color, above slate-blue, lead in tone; beneath, tawny rufous, with a black area on either side, which meet on the chest.

Head; Forehead narrowly white and a white triangular spot in front of the eye; crown deep slate-blue, each feather with a median black line; a stripe beginning over the eye reaches back and is confluent with the stripe of the opposite side, on the nape; this begins as a pure white stripe but is almost at once shaded with creamy, becoming deep buff, even tawny, on the sides of the head and nape; a post-ocular stripe, wider than the light stripe, defines it, being deep lead-slate in color; this band crosses the upper margin of the ear-coverts; the lower part of the ear-

coverts and sides of face white, often tinged with cream; a prominent moustachial cheek-stripe, deep lead-slate in color, defines the chin and upper throat.

Neck: Chin and throat pure white, which often is shaded with cream-color on the lower throat; sides of neck whitish, with creamy shade; above, the neck is concolor with the crown, deep slate-blue, separated from the crown by the broad tawny confluent eye-stripe described.

Back: Interscapular region much like the crown, but somewhat lighter in tone, each feather with a median hair-line of black and with a very narrow margin of silvery grey or white; lower back and rump dull slate-blue, almost immaculate; upper tail-coverts barred blackish brown, slate-blue and white, with white tips and median hair-lines of black.

Tail: Deep blackish brown, crossed by six narrow pure white bars and broadly tipped with pure white; the outer rectrices often have the white tips shaded or spotted with dull tawny or pale cinnamon. Seen from beneath, the tail presents almost the same appearance, save that the blackish brown is duller.

Wings: The upper wing-coverts much like the interscapular region in color and marking; the quills brownish black, washed on the external webs with slate-blue, the internal webs barred strongly with white; the inner secondaries like the lower back and the entire series conspicuously tipped with white.

Lower parts: Chin and throat pure white, the lower neck shaded with cream, in turn becoming strong buff on the breast; the sides deep blackish brown, each feather tipped with white and crossed with four or five definite narrow pure white bars; the upper or anterior edge of this dark area meets on the mid-breast, forming a narrow band, the dark region slanting back, as it is invaded by the bright tawny rufous of the remainder of the lower parts; feathers of the thighs and legs, as well as the under tail-coverts, immaculate tawny rufous; edge of the under wing creamy buff, the rest of the under wing-coverts and axillaries barred blackish brown and white and tipped with white.

Bill: Yellow at the base, shading to blue horn on the tip; the cere orange.

Iris deep hazel-brown.

Feet orange-yellow.

Adult female; cited above. Similar to the adult male, except that the

feathers of the breast are all decorated with tear-shaped median stripes of deep black; the black-barred region of the lower parts is confluent across the lower breast.

FIG. 340.



Falco fusco-cærulescens. Adult male, P. U. O. C. 7946. Details of foot; natural size.

This bird taken in November had evidently bred and is in very worn plumage.

Immature birds of both sexes resemble the adults. (Male, P. U. O. C., Rio Chico de Santa Cruz, Patagonia, 1 March, 1898, and female, P. U. O. C. 7901, Pacific Divide, Cordillera, Patagonia, 17 March, 1897). The white regions about the head are creamy buff; the edging of the feathers of the upper parts is tawny rufous, most conspicuous on the upper tail-coverts; the barring of the tail is obscured, particularly on the central rectrices. Beneath, the pattern is similar to that of adults; the chest and breast, however, differ much, being heavily marked with dark brown median stripes, widening toward the extremity of the feathers; the black sides do not meet definitely on the breast and the feathers are not barred with white, as in

the adults, all the feathers being fringed with tawny and some of them notched on their concealed surface with white.

Geographical Range.—From southern Texas and Arizona, south throughout the tropical and subtropical parts of Mexico, Central and South America to the Straits of Magellan; does not occur in the West Indies.

The series of the Aplomado Falcon secured by Mr. Hatcher and his co-workers attest the abundance of this bird in the extreme south of Patagonia, and being collected at different times of the year, the birds composing this set show the extremes of variation in plumage. This falcon usually selects some low bush or tree, a cactus or yucca, as a nesting site; the eggs are dull white or buffy white, thickly speckled and irregularly marked and spotted with deep shades of brown.

"This specimen was shot in a small valley on the plains of Patagonia, at Port Desire, in Lat. $47^{\circ} 44'$. It builds its nest in low bushes, and the female was sitting on the eggs in the beginning of January. Egg, 1.8 of an inch in longer diameter, and 1.4 in shorter; surface rough with white projecting points; color nearly uniform dirty "wood brown," thickly freckled with rather a darker tint; general appearance, as if it had been rubbed in brown mud. M. D'Orbigny supposed that Latitude 34° was the southern limit of this species; we now find its range three hundred and thirty miles further southward. The same author states that this falcon prefers a dry open country with scattered bushes, which answers to the character of the valleys in the plains near Port Desire." (Darwin in Gould's Zoology of Voyage of H. M. S. Beagle, Birds, p. 28, 1841.)

Genus CERCHNEIS Boie.

Type.

Cerchneis, Boie, Isis, 1826, p. 970; Sharpe, Cat. Bds. Brit.

Mus. i. p. 423 (1874); Sharpe, Hand-list Bds. i. p.

276 (1899) *C. rupicola*.

Erythropus, Brehm, Isis, 1828, p. 1270 *C. vespertina*.

Ægyptius, Kaup, Natürl. Syst. p. 20 (1829, nec Savign.) *C. tinnuncula*.

Pennyschistes, Kaup, Natürl. Syst. p. 87 (1829) . . . *C. vespertina*.

Falcula, Hodgs. J. A. S. B. 1837, p. 365 *C. tinnuncula*.

Tichornis, Kaup, Classif. Säug. u. Vög. p. 108 (1844). . *C. naumanni*.

Pæcilornis, Kaup, t. c. p. 108 (1844) *C. sparveria*.

Dissodectes, Sclater, P. Z. S. 1864, p. 248 *C. dickersoni*.

Geographical Range.—The entire world except Oceania.

CERCHNEIS CINNAMOMINA (Swainson).

- Falco sparverius*, King (nec Linn.), Zool. Journ. III, p. 425 (1827: Port Famine); Des Murs in Gay's Hist. Chil. Zool. I, p. 227 (1847). Burm. Reis. La Plata II, p. 437 (1861: Mendoza: Tucuman); Phil. & Landb. Cat. Av. Chil., p. 4 (1868); Leyb. Excurs. Pamp. Arjent, p. 52 (1873); Barrows, Auk, I, p. 110 (1884: Concepcion, spring and autumn: Bahia Blanca and along the Sierras to Carhué); Burm. Av. Mus. Nac. Buenos Aires, III, part X, p. 241 (1888: Patagonia); in part XI, p. 316 (1890: Rio Chico del Chubut); Huds. Idle Days in Patagonia, pp. 137, 138 (1893); Lataste. Actes Soc. Scient. Chil. III. p. civ (1893: Nuble, foot of Cordilleras, Nov.).
- Falco cinnamominus*, Swains. Anim. in Menag. p. 281 (1837); Des Murs in Gay's Hist. Chil. Zool. I. p. 226 (1847); Phil. & Landb. Cat. Av. Chil. p. 4 (1868).
- Tinnunculus sparverius*, Gould (nec Linn.) in Darwin's Voy. Beagle, Birds, p. 29 (1841: Rio Negro & Santa Cruz, Patagonia); Fraser, P. Z. S. 1843, p. 109 (Chili, breeds); Hartl. Naum. 1853, pp. 209; 220; Bp. Rev. et Mag. de Zool. 1854, p. 536; Scl. P. Z. S. 1867, pp. 330, 338 (Chili); id. & Salv. t. c. p. 988 (Arequipa); iid. Ibis, 1868, p. 188 (Sandy Point, Feb.); iid. P. Z. S. 1868, p. 143 (Conchitas); iid. Ibis, 1870, p. 499 (Coquimbo, July); Cunningh. Nat. Hist. Str. Magell. p. 86 (1871); Huds. P. Z. S. 1871, p. 260 (Patagonia, winter), 1872, p. 536 (Rio Negro); Scl. & Salv. Nomencl. Av. Neotr. p. 121 (1873); Lee, Ibis, 1873, p. 131 (Argent. Rep., very common); Durnford, Ibis, 1877, p. 89 (Tosca Cliff, Chupat Valley, Nov., breeding), p. 188 (Baradero, April), 1878, p. 398 (Central Patagonia, resident); Scl. & Salv. P. Z. S. 1878, p. 434 (Sandy Point, Jan.); Gibson, Ibis, 1879, p. 412 (Cape San Antonio, July & August); Durnf. Ibis, 1880, pp. 418, 428 (Tucuman, May & June); Scl. & Salv. Voy. Chall. II. Birds, p. 104 (1880: Sandy Point: Elizabeth Island, Jan.); Doering, Expl. al Rio Negro, Zool. p. 51 (1882: abundant in all parts of the country visited); White, P. Z. S. 1882, p. 623 (Fuerte Andalgala, Catamarca, Sept.); Vincig. Boll. Soc. Geogr. Ital. (2) ix. p. 797 (1884).
- Tinnunculus cinnamominus*, Gray, Gen. B. I. p. 21 (1844); Gurney, Ibis, 1881, pp. 547-556; id. List Diurn. B. Prey, p. 99 (1884); Scl. & Huds. Argent. Orn. II. p. 69 (1889); James, New List Chil. B. p. 7 (1892); Aplin, Ibis, 1894, p. 195 (Uruguay); Salvad. Ann. Mus.

- Genov. (2) xx. p. 615 (1900: Penguin Rookery, Feb.; Gregory Bay, April); Albert, Contr. Estud. Av. Chil. ii. p. 546 (1901).
- Tinnunculus cinnamomeus*, Bp. Consp. Av. I. p. 27 (1850: Chili and Patagonia); Hartl. Naum. 1853, pp. 209, 220; Vincig. Exped. Austr. Arg. p. 58 (1883); id. Exped. Patag. p. 59 (1883); Salv. P. Z. S. 1883, p. 426 (Chili); Withington, Ibis, 1888, p. 470 (Lomas de Zamora, not observed breeding); Holland, Ibis, 1890, p. 425 (Estancia Espartilla; Frenzel, J. f. O. 1901, p. 114 (Córdoba); Graham Kerr, Ibis, 1892, p. 204 (Estancia Espartilla, arrive in May and depart in August); Lane, Ibis, 1897, p. 180 (Arauco: Rio Bueno: Llanquehui).
- Pæcilornis cinnamominus*, Bp. Rev. et Mag. de Zool. 1854, p. 537.
- Tinnunculus sparverius* var. *cinnamominus*, Ridgw. Proc. Acad. Nat. Sc. Philad. 1870, p. 149; Oust. Miss. Scient. Cap Horn, Oiseaux, pp. 37, 324 (1891: Punta Arenas and Agua Fresca, Jan., Feb.).
- Tinnunculus sparverius* var. *australis*, Ridgw. tom. cit. p. 149.
- Cerchneis cinnamomina*, Sharpe, Cat. B. Brit. Mus. I. p. 439 (1874: Patagonia); id. P. Z. S. 1881, p. 10 (Coquimbo, June); Burm. An. Mus. Nac. Buenos Aires, III. part x. p. 241 (1888: Patagonia); Sharpe, Hand-list B. I. p. 278 (1899); Martens, Hamb. Magalh. Sammelr. p. 6 (1900: Patagonia).
- Falco sparverius cinnamomeus*, Ridgw. Proc. U. S. Nat. Mus. xii, p. 136 (1889: Sandy Point).
- Cerchneis sparverius cinnamomina*, Schallow, Zool. Jahrb. Suppl. p. 694 (1898: Punta Arenas, Jan.: Seneril Bay, March).
- ? *Elanus parverius*, Carbajal, La Patagonia, part II. p. 256 (1900).

GENERAL DESCRIPTION.

- Size*.—Adult male, P. U. O. C. 7954. Arroyo Eke [= Arroyo Gio of Map], Patagonia, 17 April, 1898. A. E. Colburn, collector: Or. No. 343. Total length, 11.75 inches. Wing, 7.60 inches. Culmen, without cere, 0.50 inches; with cere, 0.70. Tail, 5.60 inches. Tarsus, 1.45 inches. An immature male is a little larger; P. U. O. C. 7899 (see below). Total length 11.90; wing 8.00; tail 5.75 inches. Adult females are larger; P. U. O. C. 7896 (see below). Length 12.30

wing 8.40; tail 5.60 inches. P. U. O. C. 7895 (see below). Length 12.40; wing 8.20; tail 5.75 inches.

Color.—Adult male cited above.

FIG. 341.



Cerchneis cinnamomina. Adult male, P. U. O. C. 7954. About one-third natural size.

Head: Forehead and region in front of eye and an indistinct eye-stripe white; crown slate-blue, each feather striped by the black shaft-stripe;¹ a spot of deep chestnut on the after part of the crown; a streak running behind the ear-coverts and nearly joining a black well-defined nuchal band, black; a well-defined black moustachial streak, black; ear-coverts chiefly white, as are the sides of the face.

Neck: Nuchal band defining crown black; rest of upper neck bright cinnamon; chin and upper throat white, immaculate; lower throat shaded with cinnamon.

Back: Bright cinnamon, decorated with blackish bars, varying much in different birds, in the interscapular region and on the scapulars; lower back and upper tail-coverts immaculate bright cinnamon.²

¹ The standard descriptions of *C. cinnamomina* give the crown as having no chestnut marking or spot; the series from Patagonia shows at least some trace of cinnamon or chestnut in the crown of each bird.

² These birds of both sexes, all taken in the southern part of their range, average larger than birds from farther north, so that the difference is noticeable.

Tail: Bright cinnamon, crossed by a broad subterminal band of deep black; the two central rectrices broadly tipped with cinnamon, the same in shade as the body of the tail; the other rectrices more broadly tipped with clear white; the outer rectrix has the outer web pure white and the inner web with some white area above the subterminal black band; seen from below, the tail is dull cinnamon in color, with the decorations as described above.

Wings: Upper wing-coverts dark slate-blue, spotted with round black dots, the primary series barred with black; quills black, the inner webs

FIG. 342.



Cerchneis cinnamomina. Female. P. U. O. C. 7896. Natural size.

barred with white; the secondaries are black at their bases and till near the end, a broad slate-blue area here tipped with white; the inner primaries are generally bluish near their tips and white at the tip.

Lower parts: Chin and upper throat immaculate white; the lower throat, breast and chest strongly tinged with cinnamon and the rest of the lower surface white, with a creamy tint; the sides and breast decorated with pear-shaped or tear-shaped black spots on each feather; abdomen, thighs and lower tail-coverts immaculate creamy white.¹ Bill horn-blue; feet orange-yellow; iris deep brown.

Immature and young males of the year are essentially like the adult males; the markings on the lower parts pervade the upper breast as well as the chest and sides and are more streaks than spots; the general color below is creamy white.

Adult female. P. U. O. C. 7897; 12 December, 1897; Punta Arenas, Chili. J. B. Hatcher, collector. Or. No. 13. [Breeding; W. E. D. S.]

¹Some individuals lack the cinnamon suffusion on the under parts.

Adult female. P. U. O. C. 7897. Punta Arenas, Chili, 12 December, 1897. J. B. Hatcher, collector. Or. No. 13. (This is a bird in worn breeding dress just after the nesting season, W. E. D. S.)

Head: Much like that of adult male in color and markings; there is a greater amount of chestnut on the crown in the particular bird under consideration. Sides of the face essentially as in the adult male.

Neck: Very similar to that region in the adult male; the lower throat is streaked with narrow markings of ashy brown.

Back: Interscapular region barred evenly black and dull cinnamon; lower back immaculate cinnamon; upper tail-coverts nearly clear cinnamon, or with a few subterminal blackish markings.

FIG. 343.



Cerchneis cinnamomina, foot of female, natural size.

Tail: Dull cinnamon, barred narrowly with from twelve to fourteen cross bars and a broader subterminal black band, the tips of the rectrices being broadly dull cinnamon. The barring is somewhat obscured and the cinnamon ground lighter on the lower surface of the tail.

Wing: The upper wing-coverts like the interscapular region, evenly barred black and dull cinnamon; otherwise the wing is much like that of the adult male.

Lower parts whitish, the lower neck and throat narrowly and the rest

of the under surface more broadly streaked ashy brown, which on the sides preponderates over the whitish and here the markings are often tear-shaped or sagittate in character. The belly, vent, lower tail-coverts and feathered portions of the legs immaculate dull whitish.

Female young of the year or immature females (7895, P. U. O. C. Rio Chico de Santa Cruz, Cordillera of Patagonia, 18 February, 1897, A. E. Colburn, collector, Or. No. 470; 7896, P. U. O. C. Canydon, Patagonia, 9 August, 1896, J. B. Hatcher Collector, Or. No. 107) are much like adults of the same sex; there is broader marking on the under surface and the pattern in general somewhat suffused by the unworn tips of all the feathers; this is most noticeable above.

"Female: Coquimbo, June 1879. Legs grey; feet yellow; bill blue. Stomach containing remains of birds." (Sharpe, P. Z. S. 1881, p. 10.)

Geographical Range.—South America except the extreme northeastern region (Venezuela and Guiana); Patagonia and Tierra del Fuego.

The series of sparrow-hawks procured by the Princeton naturalists at every point which they explored attests to the wide distribution of the birds in southern Patagonia. All of the birds in question show chestnut markings or a patch of chestnut on the crown; this character is at variance with the examples of this form, only two of which appear to have been Patagonian, which Dr. Sharpe has described in Catalogue of Birds, British Museum, Vol. i, pp. 440–441.

The birds breed in deserted woodpecker holes or in natural cavities in trees both on the more open plains and in the forest regions of Patagonia, in November and December according to the location; they are resident throughout Patagonia and the country about the Straits of Magellan the year round.

Cunningham, in the Natural History of the Straits of Magellan (pp. 86–87), says: "Many parroquets were shot by the sportsmen on this occasion, as well as a specimen of a pretty little hawk (*Tinnunculus sparverius*) with bluish ash-coloured and rufous plumage, which we afterwards found to be common in the Strait. It is abundant in Chili, where I was told it bears the name of 'ancla,' and is, I believe, widely distributed over the American continent. It is a bold little bird, as the following incident, which occurred the same day, will show. While walking in an open space near the entrance of the woods, I suddenly heard a rustle of wings, and, on turning round to ascertain the cause, an individual of this species flew

right at me, coming within a foot of my head. It then perched on the dead branch of a tree, about a couple of yards off, and scolded at me. As I was without firearms wherewith to secure the prize, I threw some pieces of stick at it, when it made a second swoop at me, again alighting on a neighbouring tree and scolding fiercely. This manœuvre was repeated several times until I was fairly clear of the wood." (This was at Sandy Point, December 24, 1867.)

O. V. Aplin (Ibis, p. 195, 1894), states that it is "fairly common on the Rio Negro, and often seen there poised over the monte, its ringing note (like that of our kestrel, but weaker and shriller) attracting attention at once. I also used to see it in the camp there, sitting on fence-posts or an ant-hill on the look-out for large insects. On the 13th December I shot a pair in worn dress on a dead tree, rotten and broken off, and probably hollow at the top, in which I believe they were breeding. About Sta. Elena it was rare. One was reported one morning by the house-peon hovering over a hedge of cactus, etc., the resort of small birds, near where the fowls were fed; he called it the *Gavilón* and imitated its kestrel wing-beating and hovering. But the only one I secured at that camp was an adult female over its moult on the 22d April. On the 15th February I saw a pair at Las Coronas."

Order STRIGIFORMES.

Striges, Sharpe, Classif. Bds. p. 79 (1891); Pycraft, Tr. Linn. Soc. 2d ser. Zool. vii. pt. 6, pp. 223-275, pls. 24-29 (1898); Sharpe, Hand-List Bds. i. p. 280 (1899).

Family STRIGIDÆ.

Genus ASIO Brisson.

Type.

Asio, Briss. Orn. i. p. 28 (1766); Sharpe Cat. Bds. Brit.

Mus. ii. p. 225 (1875); Sharpe, Hand-list Bds.

i. p. 280 (1899) *A. otus*.

Otus, Cuvier, Leçons Anat. Comp. tabl. ii. (1799). *A. otus*.

Nyctalops, Wagler, Isis, 1832, p. 1221 *A. stygius*.

Brachyotus, Gould, P. Z. S. 1837, p. 10 *A. galapagensis*.

Pseudoscops, Kaup, Isis, 1848, p. 769 *A. grammicus*.

Phasmoptynx, Kaup, Isis, 1848, p. 769 *A. capensis*.

Rhinoptynx, Kaup, Contr. Orn. 1852, p. 114 . . . *A. mexicanus*.

Nisuelia, Bp. Rev. et Mag. de Zool. 1854, p. 542. *A. madagascariensis*.

Geographical Range.—The whole world except Australia, Oceania, Malaysia and West Africa.

ASIO FLAMMEUS (Pontoppidan) Pallas.

La Grande Chouette, Bris. Orn. I. p. 411 (1760).

Strix flammea Pontoppidan, Danske Atlas, I. p. 617, pl. xxv. (1763: Sweden).

Strix accipitrina, Pall. Reise Russ. Reichs. I. p. 455.

Strix brachyotus, Forst. Phil. Trans. LXII. p. 384.

Otus brachyotus, D'Orb. Voy. Amér. Mérid. p. 134 (1835: Patagonia); Scl. P. Z. S. 1860, p. 384 (Falkland Islands); Abbott, Ibis, 1861, p. 152 (east Falkland Islands, scarce); Burm. Reis. La Plata, II. p. 439 (1861: Rosario); Schl. Mus. Pays Bas, II. Noctuæ, p. 3 (1862: Chili); Pelz. Reis. Novara, Vög. p. 27 (1865: Chili); Scl. & Salv. Ibis, 1868, p. 188 (Philips Bay, Fuegia, April); id. P. Z. S. 1868, p. 143 (Conchitas); Huds. P. Z. S. 1870, p. 800 (Buenos Aires); Scl. & Salv. Nomencl. Av. Neotr. p. 116 (1873); Durnf. Ibis, 1876, p. 161 (Buenos Aires, common); Ibis, 1877, p. 186, 1878, p. 396 (Tambo Point, Dec., resident, not common); Scl. & Salv. P. Z. S. 1878, p. 434 (Sandy Point, Jan.: Elizabeth Island, Jan.); Doering, Expl. Al Rio Negro, Zool. p. 49 (1882: abundant); Tacz. Orn. Pérou, I. p. 196 (1884); Huds. Natural. in La Plata, pp. 62, 66 (1892); Carbajal, La Patagonia, part II. p. 260 (1900).

Otus palustris, Gould, Voy. Beagle, Birds, p. 33 (1841: Falkland Islands: Santa Cruz, Patagonia); Fraser, P. Z. S. 1843, p. 110 (Colchagua); Hartl. Naum. 1853, p. 220 (Chili); Gould, P. Z. S. 1859, p. 94 (Falkland Islands).

Ulula otus, Des Murs in Gay's Hist. Chil. Zool. I. p. 251 (1847); Phil. & Landb. Cat. Av. Chil. p. 7 (1868).

Brachyotus cassini, Cass. U. S. Expl. Exped. p. 108 (1858).

Ulula brachyotus, Phil. & Landb. Cat. Av. Chil. p. 6 (1868).

Asio accipitrinus, Cunningham. Nat. Hist. Str. Magell. p. 200 (1871); Sharpe, Cat. B. Brit. Mus. II. p. 234 (1875: Falkland Islands); Barrows, Auk, I. p. 29 (1884: Lower Uruguay, winter); Burm. An. Mus. Nac.

Buenos Aires, III. part X, p. 242 (1888: Santa Cruz, Patagonia; Falkland Islands); Frenzel, J. f. O. 1891, p. 115 (Córdoba); Sharpe, Hand-list B. I. p. 280 (1899); Martens, Hamb. Magalh. Sammelr. p. 6 (1900: Falkland Islands and Straits of Magellan); Salvad. Ann. Mus. Genov. (2) xx, p. 615 (1900: Punta Arenas, May and June: Rio Pescado, May).

Otus (Brachyotus) brachyotus, Baird, Brewer & Ridgw. B. N. Amer. III. p. 22 (1874).

FIG. 344.



Asio flammeus. Adult male, P. U. O. C. 8693. One-third natural size. The light or buff plumage.

Asio brachyotus, Gibson, Ibis, 1879, p. 423 (Cape San Antonio, not uncommon); Scl. & Salv. Voy. Chall. II. Birds, p. 104 (1880: Sandy Point, Jan.: Elizabeth Island, Jan.); White, P. Z. S. 1882, p. 622 (Monte Grande, Buenos Aires, March, common); Withington, Ibis, 1888, p. 468 (Lomas de Zamora, very common, breeds); Scl. & Huds. Argent. Orn. II. p. 49 (1889); Holland, Ibis, 1890, p. 425 (Estancia Espartilla); James, New List Chil. B., p. 6 (1892); Holland, Ibis, 1892, p. 203 (Estancia Espartilla, fairly common throughout the year, breeds

late in Nov.); Aplin, Ibis, 1894, p. 193 (Uruguay, probably resident, not observed breeding).

Otus brachyotus var. *cassini*, Oust. Miss. Scient. Cap Horn, Oiseaux, pp. 42, 324 (1890: Oazy Harbour: Orange Bay, May).

Asio accipitrinus var. *cassini*, Schalow, Zool. Jahrb. Suppl. IV. p. 698 (1898: Cabo Espiritu Santo, East Fuegia, Feb.)

GENERAL DESCRIPTION.

Size.—Adult male, P. U. O. C. 8693. La Plata, Argentina, August, 1898. S. Pozzi, collector.

Total length, 14.25 inches.

Wing, 12.00 inches.

Culmen, 0.60 inches.

Tail, 6.00 inches.

Tarsus, 1.75 inches.

Female birds average a little larger than males. P. U. O. C. 7879, Pacific Slope, Cordillera, Patagonia, 13 March, 1897. J. B. Hatcher, collector. Or. No. 610. Length, 15.40; wing, 12.50; tail, 6.50 inches.

FIG. 345.



Asio flammeus, showing the hairy bristles about the bill. Natural size.

Color.—Adult male cited.

General color: Ground-color throughout, pale buffy yellow, or ochraceous. Marked generally with median stripes of dark brownish, varying in width and definition.

Head: Small, inconspicuous ear-tufts above the facial disk. Eyebrows and loreal region whitish, with strong bristles having black shafts; facial disk whitish, finely striped on the outer margin with deep brown; on the inner part, around the eye, this brown pervades, the lighter color hardly

showing. Rest of the head yellowish buff, the median brown stripes on each feather being wider than the marginal buffy shade.

Neck: Above and on the sides like the head; chin and throat dirty whitish.

Back: Interscapular region and lower back with the median brown stripes as wide as the marginal buff portions of the feathers; the rump with obsolete or faint crescentic marks; upper tail-coverts nearly or quite immaculate buffy yellow.

Tail: The buffy yellow ground-color becomes lighter at the edges and ends of the rectrices; this ground-color is crossed by five or six broad brown bands equal in width to the buffy interspaces; the terminal buffy yellow band is wider than the others; the barring is most definite on the central and inner feathers, the basal ones often becoming broken or not well defined on the outer rectrices.

FIG. 346.



Asio flammeus, showing the relative length of primaries. One-half natural size.

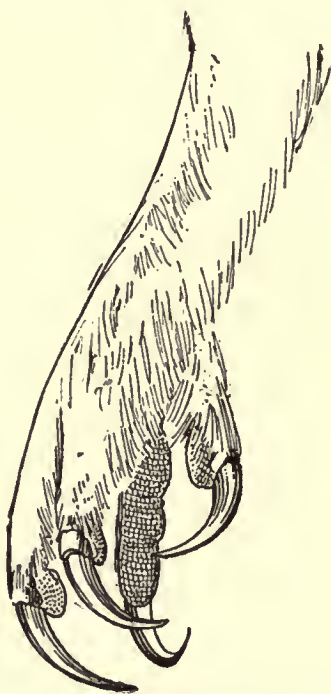
Wings: The upper wing-coverts like the interscapular region but rather darker and the markings not so regular and inclined to be more like bars than stripes; quills ruddy buff, shading to silvery at their tips, each feather being plainly and definitely checkered with brown bars, narrowest on the inner webs.

Lower parts: Chin and throat whitish, or dirty white; all the rest of the under parts buffy yellow; streaked everywhere, except on the vent, lower tail-coverts and legs, including the thighs, with narrow median stripes of deep brown on each feather; the buffy yellow areas being wider than the

dark streaks; under wing-coverts nearly white, the outer series blackish terminally, forming a characteristic spot on the almost white lining of the under wing; axillaries silvery buff.

Bill horn-blue, dark in shade.

FIG. 347.



Asio flammeus, showing the feathering of the foot. Natural size.

Feet feathered, immaculate buff in color.

Iris: Orange to lemon-yellow in varying shades.

The adults do not vary in color with the sex, the males and females being indistinguishable in this respect.

Young birds in the first plumage are generally deeper colored than are adults and more uniform as to markings.

Nestlings in the down are buff-yellow in color, darker about the face, and the quills, as soon as they develop, show the characteristic marks.

There is a wide variation in individual birds of this species and what may be termed a dark phase can be discriminated. In such the buffy areas become so rufescent as to give the general effect of a much darker bird. The plan of coloring is however the same.

Geographical Range.—Both hemispheres; tropical, temperate regions, extending in the north into the Arctic Circle, the Sandwich Islands and the

Falkland Islands. Absent in west Africa, Oceania and Australia, and not found in the Galapagos and in parts of the West Indies.

The short-eared owl was found in great numbers by the naturalists of the Princeton Expeditions, as will be seen by the appended field notes from Mr. Hatcher. The birds which were collected are all of the rufescent type or approach that form, while birds in the University collection from the plains of Argentina and north Patagonia are without exception of the lighter color, more nearly approaching Old World examples in appearance.

FIG. 348.



Asio flammeus. Adult female, P. U. O. C. 7879. Rufescent or dark plumage.
One-third natural size.

Mr. Hatcher writes: "Abundant in the open park and about the swamps in the forests in the Lower Andes, where it remains concealed during the day in the tall grass, but appearing in great numbers in the evening to feed on small rodents. Seldom seen on trees, though common along the forests. I have never observed it perching. When disturbed it always settled again on the ground in the grass and not in the woods." (Hatcher, Mss. Notes.)

Dr. Sharpe, in reviewing the fine series of this owl in the British Museum, in which he includes the bird as found in the Galapagos, now thought to be specifically distinct, gives the following summary. He concludes that there are possibly four groups into which the short-eared owl falls, these being, geographically, those of the Old World, of North and South America (including the Falkland Islands), those of the Sandwich Islands and those of the Galapagos.

"The excellent series of short-eared owls enumerated above [the list is omitted here] enables me to speak with some certainty concerning the various races which have been raised to specific distinction by various ornithologists. In the foregoing list of the specimens in the national collection I have arranged them under four headings, each form thus classified having slight peculiarities, but none of them possessing sufficient characters to allow of their being specifically separated. All over Europe and Asia there is but one type, according to my observations; but in America the general run of the specimens is rather darker and more ochraceous; hence the short-eared owl of the New World which I could not separate in the least from European examples; and in comparing specimens from the Old and New World care must be taken that birds of the same sex are examined, as the females of both are always more rufous than the males; thus if a female of the American short-eared owl were compared with a male of the European kind, the impression would be that the former was more rufous, and *vice versa*. I have seen, however, birds of both sexes from British Columbia and from Chili which were absolutely similar to British-killed specimens.

"In the Falkland Islands the short-eared owls seem permanently rufescent, but cannot be distinguished from some Chilian skins; and as some of the latter agree perfectly with European examples, no line for specific separation can be drawn: I must say, however, that at present I have never seen a light-coloured bird from the Falklands.

"The owl from the Galapagos is by far the most different of any, by reason of its small size, dark coloration, golden forehead, and striped thigh-feathers. I have never seen a specimen from any other locality exhibiting the latter character; at the same time a Bogota skin in every other respect approaches it in appearance; and therefore, although I admit that at present it would appear to be specifically distinct, I should like to be sure that the New-Granadian short-eared owl would not form a connecting link.

"The specimens from the Sandwich Islands form an interesting pair on account of locality; but they cannot be separated as a species. They are rather small, and have a very dusky frontal patch; this I have found in other Asiatic specimens; and therefore the Sandwich Island owl can only be considered a small race of *A. accipitrinus*." (Sharpe, Cat. Bds. Brit. Mus., Vol. II. pp. 238–239.)

Hudson says (P. Z. S. 1870, pp. 800–801): "The Lechuson (*Otus brachyotus*), though, like the preceding species, pretty generally distributed over the pampas, was, until within the last three years, rather a scarce bird. It breeds on the ground, makes no nest, but merely clears and presses a circular spot on the ground among the loose tussocks of long grass, and lays four white eggs of a slightly oval form. Near sunset the Lechuson is seen quitting its concealment and sitting perched upon a thistle or other eminence, or sailing above the ground with a slow heron-like flight; at intervals while flying it strikes its wings together under its breast in a very sudden, quick manner. It is not at all shy, the intrusion of a man or dog at evening in the field it frequents appearing greatly to excite its indignation. An imitation of its cry will attract numbers of them about a person; the report of a gun has the same effect. The language of this species has considerable variety; when alarmed or angry they utter a loud, sharp hiss, and at times a sudden shrill laugh-like cry. They have also a dismal hollow scream, not often heard, and at twilight hoot—this part of their vocal performance sounding not unlike the distant baying of a 'deep-mouthed' watch-dog.

"The Lechuson frequenting open plains in preference to woods, and hiding by day on the ground, has the colour of its plumage adapted to a country like the desert pampas, rough with a brown vegetation. But the introduction and increase of sheep quickly changed the aspect of a vast extent of the plain; the long brown grasses disappeared, their place being taken by a tender herbage, short and brilliant green; the country was thus unfitted for their pasture. All the wild animals have, no doubt, been greatly affected by this sudden change in vegetation and total destruction of cover. But cultivation has now partially restored the physical conditions necessary to the preservation and increase of many species like the Lechuson. In future descriptions I shall frequently refer to the changes on the pampas."

The same author writes in his Naturalist in La Plata (pp. 62–64): "In

the autumn of the year countless numbers of storks (*Ciconia maguari*) and of short-eared owls (*Otus brachyotus*) made their appearance. They had also come to assist at the general feast. . . .

"After cold weather set in the storks went away, probably on account of the scarcity of water, for the owls remained. So numerous were they during the winter that any evening after sunset I could count forty or fifty individuals hovering over the trees about the house. Unfortunately they did not confine their attentions to the mice, but became destructive to the birds as well. I frequently watched them at dusk, beating about the trees and bushes in a systematic manner, often a dozen or more of them wheeling together about one tree, like so many moths about a candle, and one occasionally dashing through the branches until a pigeon—usually the *Zenaida maculata*—or other bird was scared from its perch. The instant the bird left the tree they would all give chase, disappearing in the darkness. I could not endure to see the havoc they were making amongst the ovenbirds (*Furnarius rufus*—a species for which I have a regard and affection almost superstitious), so I began to shoot the marauders. Very soon, however, I found it was impossible to protect my little favourites. Night after night the owls mustered in their usual numbers, so rapidly were the gaps I made in their ranks refilled. I grew sick of the cruel war in which I had so hopelessly joined, and resolved, not without pain, to let things take their course. A singular circumstance was that the owls began to breed in the middle of winter. The field-labourers and boys found many nests with eggs and young birds in the neighbourhood. I saw one nest in July, our coldest month, with three half-grown young birds in it. They were excessively fat, and, though it was noon-day, had their crops full. There were three mice and two young cavies (*Cavia australis*) lying untouched in the nest.

"The short-eared owl is of a wandering disposition, and performs long journeys at all seasons of the year in search of districts where food is abundant; and perhaps these winter-breeders came from a region where scarcity of prey, or some such cause, had prevented them from nesting at their usual time in summer."

O. V. Aplin, *Ibis*, p. 193, 1894, says: "Met with at various dates continuously from the 26th November to the 7th May, and it is doubtless a resident, but I could never discover the nest. On one occasion (1st April) one hovered over some thick paja, on being flushed, with an angry

harsh, chattering or barking cry; but I was in pursuit of something else at the time, and could not find the exact spot afterwards. Those I saw and shot were like the warm-coloured form found in England."

Genus BUBO Dum.

Type.

<i>Bubo</i> , Duméril, Zool. Analyt. 1806, 34 Cuv. Règne An.	
1817, p. 331; Sharpe Cat. Bds. Brit. Mus. ii. p. 12	
(1875); Sharpe, Hand-list Bds. i. p. 282 (1899) .	<i>B. bubo</i> .
<i>Bubotus</i> , Rafinesque (teste G. R. Gray)	<i>B. bubo</i> .
<i>Ascalaphia</i> , Geoffr. St.-Hilaire, 1830 (teste G. R. Gray).	<i>B. ascalaphia</i> .
<i>Huhua</i> , Hodgs. As. Research, xix. p. 173 (1836) . .	<i>B. nipalensis</i> .
<i>Heliaptex</i> , Swains. Classif. B. ii. p. 217 (1837) . . .	<i>B. arcticus</i> .
<i>Urrua</i> , Hodgs. J. A. S. B. vi, p. 372 (1837)	<i>B. bengalensis</i> .
<i>Etoglaux</i> , (pro <i>Urrua</i>), Hodgs. J. A. S. B. x. p. 28	
(1841)	<i>B. nipalensis</i> .
<i>Mesomorpha</i> (pro <i>Urrua</i>), Hodgs. l. c. p. 28 . . .	<i>B. bengalensis</i> .
<i>Aibryas</i> , Gloger, Handb. Naturf. p. 223 (1842) . .	<i>B. arcticus</i> .
<i>Nyctætus</i> , Gloger, l. c. p. 228 (1842)	<i>B. lacteus</i> .
<i>Pseudoptynx</i> , Kaup, Isis, 1848, p. 770	<i>B. philippensis</i> .
<i>Megaptynx</i> , Bp. Rev. et Mag. de Zool. 1854, p. 542 .	<i>B. magellanicus</i> .
<i>Pachyptynx</i> , Bp. l. c. p. 542	<i>B. lacteus</i> .
<i>Nisnella</i> , Bp. l. c. p. 542	<i>B. maculosus</i> .
<i>Ptiloskelos</i> , Tickell, J. A. S. B. xxviii. p. 448 (1859) .	<i>B. nipalensis</i> .

Geographical Range.—The whole Western Hemisphere; the Eastern Hemisphere except the Moluccas, Australia and Oceania.

BUBO MAGELLANICUS Gmelin.

Hibou des Terres Magellaniques, D'Aubent. Pl. Enl. I. pl. 385.

Strix bubo ♂ *Magellanicus*, Gm. Syst. Nat. I. p. 286 (1788).

Bubo Magellanicus, D'Orb. Voy. Amér. Mérid. p. 137 (1835: Patagonia); Gray, List Accipitr. Brit. Mus. p. 46 (1844); Des Murs in Gay's Hist. Chil. Zool. I. p. 248 (1847); Hartl. Naum. 1853, p. 220 (Chili); Pelz. Reis. Novara, Vög. p. 26 (1865: Chili); Scl. & Salv. Ibis, 1868, p. 188 (Santiago Bay: Sandy Point, Feb. & Dec.); Sharpe, Cat. B. Brit. Mus. II. p. 29 (1875: Straits of Magellan); Durnf. Ibis, 1880, p. 361 (Salta); Sharpe, P. Z. S. 1881, p. 10 (Cape Gregory, Jan.; Port Henry, Jan.; Mayne Harbour, Jan.); Vincig. Boll. Soc. Geogr. Ital. (2) IX.

p. 797 (1884); Phil. Ornith., IV. p. 158 (1888; Ascotan, Tarapacá); Burm. An. Mus. Nac. Buenos Aires, III, part X. p. 241 (1888: Patagonia), part XI. p. 316 (1890: Deseado, March); Ridgw. Proc. U. S. Nat. Mus. xii, p. 136 (1889: Gregory Bay); Oust. Miss. Scient. Cap Horn, Oiseaux, pp. 41, 324 (1891: Orange Bay, March; Scott Isl., July; Port Desire, Dec.); Lane, Ibis, 1897, p. 177 (Vilugo, N. W. of Sacaya, breeds); Gosse in Fitzgerald's Highest Andes, App. c. p.

FIG. 349.



Bubo magellanicus. Adult female. P. U. O. C. 7949. About one-fourth natural size.

343 (1899: Punta de las Vacas); Sharpe, Hand-list B. I. p. 283 (1899); Salvad. Ann. Mus. Genov. (2) xx. p. 615 (1900: Gregory Bay, April: Punta Arenas, May; Rio Pescado, May); Martens, Hamb. Magalh. Sammelr. p. 6 (1900: Straits of Magellan).

Nacurutu, Azara, Apunt. I. p. 192 (1802).

Strix nacurutu, Vieill. N. Dict. d'Hist. VII. p. 44 (1817: ex Azara).

Asio magellanicus, Less. Man. d'Orn. I. p. 116 (1828); Oberholzer, Proc. U. S. Nat. Mus., xxvii, pp. 179, 188 (1904).

Bubo virginianus, Fraser (nec Gm.), P. Z. S. 1843, p. 110 (Chili); Hartl. Ind. Azara, p. 3 (1847); Cunningh., Nat. Hist. Str. Magell. pp. 91, 277 (1871); Huds. P. Z. S. 1872, p. 549 (Rio Negro); Scl. & Salv., Nomencl. Av. Neotr. p. 116 (1873); Doering Expl. al Rio Negro, Zool. p. 49 (1882: Choelechoel, abundant); White, P. Z. S. 1883, p. 433 (Cosquin, Córdoba, Sept.); Barrows, Auk. I. p. 29 (1884: Arroyo de Gualaguaychû); Scl. & Huds. Argent. Orn. II. p. 50 (1889); Frenzel, J. f. O. 1891, p. 115 (Córdoba); Graham Kerr, Ibis, 1892, p. 141 (Fortin Nueve); James, New List Chil. B. p. 6 (1892).

Ulula crassirostris, Des Murs in Gay's Hist. Chil. Zool. I. p. 254 (1847),

Bubo crassirostris, Burm. Reis. La Plata, II. p. 439 (1861: Mendoza); Vincig. Boll. Soc. Geogr. Ital. (2) IX. p. 797 (1884); Carbajal, La Patagonia part II. p. 260 (1900).

Bubo virginianus var. *magellanicus*, Baird, Brewer and Ridgw. B. N. Amer. III. p. 61 (1874).

GENERAL DESCRIPTION.

Size.—Adult male, 7949, P. U. O. C. Arroyo Eke, Patagonia, 14 May, 1898. A. E. Colburn, collector.

Total length, about 18.00 inches.

Wing, 12.00 inches.

Tail, 8.00 inches.

The adult female is larger than the male, but similar in color; length about 20.00; wing 13.50; tail 8.50 inches.

Color.—Adult male cited above.

General color: Black, white and buff, as well as brown in varied and modified pattern and shade; vermiculated and indistinctly barred above; narrowly and regularly barred below.

Head: With distinct and prominent ear-tufts about an inch and three-quarters long; facial disk white, varied with dull buff and dusky, the feathers with hair-like black shafts; about the bill and lower part of facial disk many stiff black hairs; eyelid black; facial disk defined by a clear black band, starting in front of the eye and passing above; it becomes broader on the posterior margin of the disk and again narrows at the

bottom anteriorly as it approaches the base of the bill; lores and feathers in front of eye nearly or quite white; top of head dull seal-brown, the feathers tipped, margined and partially barred with white and buffy white, the whole crown having a barred pattern; ear-tufts black, with broad anterior margins to the feathers, white or buffy white.

FIG. 350.



Bubo magellanicus. P. U. O. C. 7949. Natural size. Details of facial disk, ear, bill and eye.

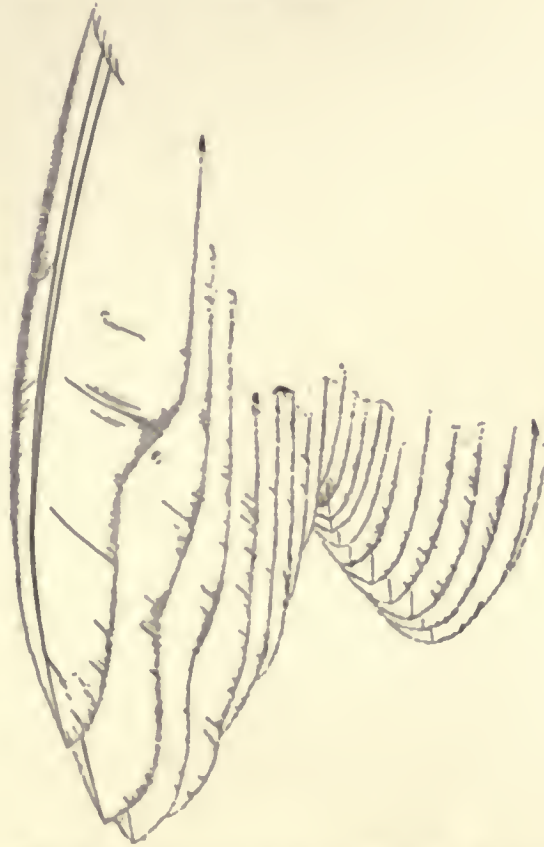
Neck: Above much like the crown of head; the sides lighter, the feathers dull isabelline, barred and with narrow median streaks of dusky; the throat pure silvery white, defined anteriorly by the ruff of the facial disks and posteriorly by a more or less distinct dusky band nearly an inch wide in some birds, but more frequently not more than a third of an inch.

Back: Interscapular region, lower back and rump like the crown in general color, but with more buff prevailing; the feathers are vermiculated with the three colors, white silvering the whole so as to shade the entire upper surface; the feathers on the rump and upper tail-coverts are inclined to be definitely barred and not vermiculated.

Tail: The two central rectrices dull seal-brown, strongly vermiculated with silvery and buffy white, the brown presenting toward the base of the feathers bar-like pattern; the remaining rectrices, seen from above, are distinctly buffy, shading to white at the outer edges and crossed by five or

more bars of dull seal-brown; seen from below, the tail appears nearly white, with little or no buff tint, and crossed by seven bars of dull seal-brown.

FIG. 351.



Bubo magellanicus. Female, P. U. O. C. 7949. One-half natural size. Emargination and relative length of quills.

Wings: Primaries buffy white; the outer exposed webs marked with alternating quadrate areas, dull seal-brown and pale buffy white; the inner webs more distinctly buff and barred with narrower markings of dull seal-brown; the outer secondaries much like the primaries and the inner ones with the barring undefined and not precise; upper wing-coverts like the back; lower wing-coverts creamy white or buffy white, barred with dull seal-brown in narrow bands; the outer series dull seal-brown, forming a wing-spot, conspicuous from below in the flying bird; axillaries like the lower wing-coverts; the effect of the whole wing, as seen from beneath, is light buffy white, the feathers tipped with dull seal-brown and crossed by seven definite bars of the same shade.

Lower parts: Throat and under-neck as described; a collar of dark feathers below the white throat; breast, chest, sides and flanks dull white or buffy white narrowly and closely barred with dull seal-brown; the abdomen about the vent and the thighs more distinctly buff and generally immaculate or nearly unmarked; the lower tail-coverts dull white or buffy white, with narrow seal-brown bars.

Bill: Horn-blue.

Iris: Lemon-yellow to orange.

Feet: Feathered as shown in the cut.

FIG. 352.



Bubo magellanicus. Adult female, P. U. O. C. 7949. Natural size.
Showing the feathering of foot.

Female adult: The female adult is colored like the male, but is appreciably larger.

Fully feathered young birds and young of the year are not to be distinguished from adults by their plumage.

Downy young: The downy young vary from pure cotton-white to dull buffy white.

Geographical Range.—Southern South America, from southern Brazil and southern Peru, southward to the Straits of Magellan; all Patagonia, and Tierra del Fuego.

The Magellanic Horned Owl was found by the Princeton naturalists at all points where they explored Patagonia and birds from the sea coast, as well as examples from the Cordillera, were brought back in the collections. This fine series, as well as the birds in the British Museum and those in the Museum of the Jardin des Plantes, form the basis for the descriptions here given.

There is very considerable variation presented by birds from the several localities where they were obtained, which, independent of age, the season of the year or sex, show two well defined extremes, which seem to correlate fairly well with the habitat of the two forms. Birds from the Straits of Magellan, from Tierra del Fuego and from the southeastern coast of Patagonia are notably greyer and decidedly more silvery than are those from northern Patagonia, the Rio Negro region, or from the Cordillera of Patagonia; from both these latter regions the birds are much more shaded with buff, especially on the upper surface, while some individuals taken at Arroyo Eke in the interior and at Rio Gallegos near the coast, are wholly deficient in the prominent buff tint that characterizes the other birds.

In the P. Z. S. 1881, p. 10, Dr. Bowdler Sharpe describes some specimens of this owl as follows:

"Male: Cape Gregory, Straits of Magellan, January 1879. Irides golden yellow; horns prominent; claws black.

"Female: Port Henry, Straits of Magellan, January 28, 1879.

"Male: Mayne Harbour, Straits of Magellan, January 1879.

"The female is a much darker bird than the male, suggesting almost the possibility of its being in melanistic plumage; the general aspect of the upper surface is almost uniform; and the centre tail-feathers have no cross bars at all. In the male the light cross bands are seven in number, without counting the whitish apical band."

E. W. White (P. Z. S. 1883, p. 433) says: "This bird was brought to me alive, and I managed to keep it for some time: in fact they soon become very tame and tractable, some of the natives keeping them as pets loose about the farmyard. There are a few to be met with in this valley; and once I went a journey of some distance with a friend to the roosting-place of a pair in the highlands near the mountain-ravines; he told me that he had often observed them in some large Algarroba trees.

"Our visit was fruitless, but we had ample evidence of their having been there lately. The local name for this Owl is 'Quitilipe,' evidently given it from its peculiar hooting."

Cunningham (Nat. Hist. Str. Magell. 1871, 91) says of this species: "While we were engaged in looking for a place to cross a stream with the intricate windings of which it took some experience to become acquainted, a large owl was discovered perched on the branch of a neighbouring tree, and shot. It proved to be a fine specimen of the *Bubo Magellanicus*, a species which, I am informed by Mr. Sclater, ranges over nearly the whole extent of North and South America, being identical with the well-known Virginian Horned Owl. We were struck with the cat-like appearance which its great yellow eyes communicated to its countenance. The plumage of this species, which sometimes exceeds two feet in length, is beautifully mottled with a variety of shades of black, brown, and grey. In the Straits of Magellan, besides occurring in the wooded districts, it is far from rare in the open country, where it sometimes may be seen perched on the barberry bushes, or sailing quietly along on the lookout for its prey, which consists in great measure of rodents of various species." (Sandy Point, December, 1866.)

Again (p. 277) he writes: "In the neighbourhood of these warrens I noticed a good many specimens of the great owl (*Bubo Magellanicus*). These were in general perched on the barberry bushes, and were very bold, barking at me in their peculiar fashion, and allowing me to come within three or four yards of them before taking flight." (Gregory Bay, December, 1868.)

Hudson (Idle Days in Patagonia, pp. 190-193) writes: "Nature has many surprises for those who wait on her; one of the greatest she ever favoured me with was the sight of a wounded Magellanic eagle-owl I shot in Patagonia. The haunt of this bird was an island in the river, overgrown with giant grasses and tall willows, leafless now, for it was in the middle of winter. Here I sought for and found him waiting on his perch for the sun to set. He eyed me so calmly when I aimed my gun, I scarcely had the heart to pull the trigger. He had reigned there so long, the feudal tyrant of that remote wilderness! Many a water-rat, stealing like a shadow along the margin between the deep stream and the giant rushes, he had snatched away to death; many a spotted wild pigeon had woke on its perch at night with his cruel crooked talons piercing its flesh;

and beyond the valley on the bushy uplands many a crested tinamou had been slain on her nest and her beautiful glossy dark green eggs left to grow pale in the sun and wind, the little lives that were in them dead because of their mother's death. But I wanted that bird badly and hardened my heart; the 'demoniacal laughter' with which he had so often answered the rushing sound of the swift black river at eventide would be heard no more. I fired; he swerved on his perch, remained suspended for a few moments, then slowly fluttered down. Behind the spot where he had fallen was a great mass of tangled dark-green grass, out of which rose the tall, slender boles of the trees; overhead through the fretwork of leafless twigs the sky was flushed with tender roseate tints, for the sun had now gone down and the surface of the earth was in shadow. There, in such a scene, and with the wintry quiet of the desert over it all, I found my victim stung by his wounds to fury and prepared for the last supreme effort. Even in repose he is a big eagle-like bird; now his appearance was quite altered, and in the dim, uncertain light he looked gigantic in size—a monster of strange form and terrible aspect. Each particular feather stood out on end, the tawny barred tail spread out like a fan, the immense tiger-coloured wings wide open and rigid, so that as the bird that had clutched the grass with his great feathered claws, swayed his body slowly from side to side—just as a snake about to strike sways his head, or as an angry, watchful cat moves his tail—first the tip of one, then of the other wing touched the ground. The black horns stood erect, while in the centre of the wheel-shaped head the beak snapped incessantly, producing a sound resembling the clicking of a sewing machine. This was a suitable setting for the pair of magnificent furious eyes, on which I gazed with a kind of fascination, not unmixed with fear, when I remembered the agony of pain suffered on former occasions from sharp, crooked talons driven into me to the bone. The irides were of a bright orange colour, but every time I attempted to approach the bird they kindled into great globes of quivering yellow flame, the black pupils being surrounded by a scintillating crimson light, which threw out minute yellow sparks into the air. When I retired from the bird this preternatural fiery aspect would instantly vanish.

"The dragon eyes of that Magellanic owl haunt me still, and when I remember them, the bird's death still weighs on my conscience, albeit by killing it I bestowed on it that dusty immortality which is the portion of stuffed specimens in a museum."

Genus STRIX Linn.

Type.

Strix, Linn. Syst. Nat. Ed. X. I. p. 92 (1758) *S. aluco*.*Syrnium*, Savign. Descr. Egypte, p. 298 (1809); Sharpe, Cat.

Bds. Brit. Mus. ii. p. 244 (1875); Sharpe, Hand-list Bds.

i. p. 293 (1899) *S. aluco*.*Ulula*, Cuvier, Regn. Anim. i. p. 329 (1817) *S. uralense*.*Geographical Range*.—The whole world except Madagascar, the Austro-Malayan subregion, Australia and Oceania.

STRIX RUFIPES King.

Strix rufipes, King, Zool. Journ. III. p. 426 (1827: Port Famine).*Ulula rufipes*, Darw. Voy. Beagle, Birds, p. 34 (1841: Tierra del Fuego);

Des Murs in Gay's Hist. Chil. Zool. I. p. 251 (1847); Phil. & Landb.

Cat. Av. Chil. p. 7 (1868).

Ulula fasciata, Des Murs in Gay's Hist. Chil. Zool. I. p. 252 (1847); id.

Iconogr. Orn. pl. xxxvii.

Syrnium rufipes, Gray, Hand-list B. I. p. 48, No. 508 (1869); Scl. & Salv.

Nomencl. Av. Neotr. p. 116 (1873: Patagonia); Sharpe, Cat. B. Brit.

Mus. II. p. 261 (1876: Port Famine and Straits of Magellan); Burm.

An. Mus. Nac. Buenos Aires, III. part X. p. 242 (1888: Straits of

Magellan), part XI. p. 316 (1890: Valley of Deseado); Oust. Miss.

Scient. Cap Horn, Oiseaux, pp. 254, 324 (1891); James, New List

Chil. B. p. 6 (1892); Schalow, Zool. Jahrb. Suppl. IV. p. 697 (1898:

Sene Almirantazgo, Fuegia, Jan.); Sharpe, Hand-list B. I. p. 294

(1899); Martens, Hamb. Magalh. Sammelr. p. 6 (1900: Patagonia:

Straits of Magellan: Fuegia).

GENERAL DESCRIPTION.

Size.—Adult male, 7881, P. U. O. C. Rio Chico, Cordillera, Patagonia,
25 February, 1897. J. B. Hatcher.

Total length, about 15.50 inches.

Wing, 10.00 inches.

Tail, 6.00 inches.

The female does not differ in color from the male, but is larger; 7882,
adult female (presumably mate of male cited), from same locality, collected
the same day, length about 16.90; wing 11.40; tail 7.25.

Color.—Adult male cited above.

General color: Dark seal-, or chocolate-brown, clear buff and pure white.

FIG. 353.



Strix rufipes. Adult male, P. U. O. C. 7881. About one-fourth natural size.

Head: Round and without ear-tufts. Top of the head barred with distinct white bars on a chocolate-brown ground, each feather with concealed, underlying bars of clear deep buff; facial disk greyish white, obscured by brownish black in front of the eye, by tawny buff below the eye, and by obsolete concentric bars, five in number, clearest on the outer and lower rims, of dusky brown; loral plumes silvery white, the shafts developing into stiff hair-like bristles about the beak; the facial ruff bordering the disk, chocolate-brown, with tips and marginal marks to the feathers deep clear buff; eyelids dusky black.

Neck: The back of the neck like the top of the head, but with the white bars broader; the chin white or whitish; the throat and lower neck barred white and chocolate-brown, the white bars subterminal, and a second buffy-white bar after a brown one.

Back: Chocolate-brown, barred with subterminal white bars which are conspicuous, and with deep buff bars more or less concealed; the rump and upper tail-coverts show the buff bars not hidden as on the interscapular region.

FIG. 354.



Strix rufipes. Adult male, P. U. O. C. 7881. Details of head. Natural size.

Tail: From above, chocolate-brown, with a terminal white band, and crossed by eight deep bars of buff half as wide as the brown intervals; from below, silvery grey, the buffy bars being isabelline and the brown intervals deep ash.

Wings: Primaries deep chocolate-brown; the outer webs with quadrate brown spots interrupted with buff bars on the first and the inner quills, the second, third, fourth and fifth with most of the barring distinctly white; the secondaries barred brown and buff, with little or no indication of white; the median and greater series of upper wing-coverts very distinctly barred with buff and notched with white on their external webs; the lesser upper wing-coverts with the barring quite obsolete; the primary coverts clear uniform chocolate-brown, making a spot; lower wing-coverts yellowish, barred obscurely with dusky; axillaries the same shade, but distinctly barred.

Lower parts: Breast and chest barred narrowly and evenly brown and white, the white bars being subterminal and there are two white bars and

a concealed buff one on each feather; on the rest of the under surface the white bars are broader than the brown ones and the buff bars are not fully concealed, but giving a buff tone or wash to this region; leg-feathers

FIG. 355.



Strix rufipes. Detail of wing, reduced.

deep buff and silky in quality, as well as immaculate; the under tail-coverts dirty or buffy white, with subterminal bars of dusky; there are frequently two dusky bars, but as often only one on these feathers.

Bill: Horn-blue. Iris: Dull blue (Hatcher). Feet feathered. The sexes are alike in color and the young of the year and immature birds do not differ greatly from the old ones.

Geographical Range.—Tierra del Fuego, Chili and Patagonia as far north as 44° south latitude.

The Patagonian Barred Owl does not appear to be a widely distributed form; it has been recorded from several points in Tierra del Fuego, where it is a resident bird, and from there north to the Valley of the Rio Deseado, about the northern boundary of the province of Santa Cruz. Darwin secured the bird on one of the extreme southern islands of Tierra del Fuego and the bird has been found breeding in central Chili. Mr.

Hatcher collected the pair of birds used as a basis for the descriptions given above, in the Cordillera at the upper waters of the Rio Chico de Santa Cruz, late in February. The birds seem to be rather rare even where they occur, no large representation, as in the case of *Bubo magellanicus*, being recorded from any locality.

FIG. 356.



Strix rufipes. Detail of feathering of foot and toes. Natural size.

Genus SPEOTYTO Gloger.

Type.

Speotyto, Gloger, Handb. Naturg. p. 226 (1842); Sharpe,

Cat. Bds. Brit. Mus. ii. p. 142 (1875); Sharpe, Hand-

list Bds. i. p. 297 (1899) *S. cunicularia*.

Pholeoptynx, Kaup, Isis, 1848, p. 769 *S. cunicularia*.

Geographical Range.—Western North America, east to the great plains, and south through middle America to Guatemala; southern Florida; Central and all of South America.

SPEOTYTO CUNICULARIA (Molina).

La Chouette de Coquimbo, Briss. Orn. I. p. 525 (1760).

Coquimbo Owl, Lath. Gen. Syn. I. p. 145 (1781).

- Strix cunicularia*, Molina, Hist. Nat. Chil. p. 343 (1782); Gm. Syst. Nat. I. p. 292 (1788); Vieill. N. Dict. d'Hist. Nat. VII. p. 35 (1817).
Urucurea, Azara, Apunt. I. p. 214 (1802).
Strix grallaria, Spix Av. Bras. I. p. 21 (1824).
Noctua cunicularia, Darw. Journ. Nat. Beagle, p. 145 (1832-36); D'Orb. Voy. Amér. Mérid. p. 128 (1835: Patagonia); Des Murs in Gay's Hist. Chil. Zool. I. p. 245 (1847); Burm. J. f. O. 1860, p. 143; id. Reis. La Plata, II. p. 440 (1861); Schl. Mus. Pays Bas. Striges, p. 30 (1862); Durnf. Ibis, 1877, p. 38 (Chupat Valley, breeding); id. Ibis, 1878, p. 397 (Valleys of the Sengel and Sengelen); Doering, Expl. al Rio Negro, Zool. p. 49 (1882: Rio Colorado and Rio Negro).
Noctua urucurea, Less. Traité d'Orn. p. 104 (1831).
Athene cunicularia, Darw. Voy. Beagle, Birds, p. 31 (1841: Rio Negro); Fraser, P. Z. S. 1843, p. 109 (Chili); Hartl. Ind. Azara, p. 4 (1847); id. Naum. 1853, p. 220 (Chili); Pelz. Reis. Novara, Vög. p. 25 (1865: Chili); Darw. Natural. Voy. Beagle, pp. 70, 125 (1882).
Pholeoptynx cunicularia, Scl. & Salv. Ibis, 1868, p. 188 (Cape St. Vincent: Fuegia, April); iid. P. Z. S. 1868, p. 143 (Conchitas); iid. Nomencl. Av. Neotr. p. 117 (1873); Lee, Ibis, 1873, p. 131 (Argentine Republic); Huds. P. Z. S. 1874, p. 308 (Buenos Aires); Durn. Ibis, 1876, p. 161 (Buenos Aires, abundant May to Sept.), 1877, p. 186 (Baradero, April, common); Gibson, Ibis, 1879, p. 423 (Cape San Antonio, breeds Oct. to Dec.); Durnf. Ibis, 1880, p. 416 (Tucuman, May); White, P. Z. S. 1882, p. 622 (Pilciao, Andalgala, Catamarca, Sept. breeds; Salto, Oct.: Concepcion, Misiones, June): Tacz, Orn. Pérou, I. p. 174 (1884); Huds. Natural. in La Plata, p. 298 (1892).
Speotyto cunicularia, Sharpe, Cat. B. Brit. Mus. II. p. 142 (1875); id. P. Z. S. 1881, p. 10 (Coquimbo, June); Barrows, Auk, I. p. 30 (1884: Concepcion, abundant June); Burm. An. Mus. Nac. Buenos Aires, III. part x. p. 242 (1888: Northern Patagonia); Withington, Ibis, 1888, p. 469 (Lomas de Zamora, breeds); Scl. & Huds. Argent. Orn. II. p. 52 (1889: Patagonia, abundant); Holland, Ibis, 1890, p. 425 (Estancia Espartilla, very common); Frenzel, J. f. O. 1891, p. 115 (Córdoba); James, New List Chil. B. p. 6 (1892); Holland, Ibis, 1892, p. 203 (Estancia Espartilla, abundant resident, breeds early in Oct.); Aplin, Ibis, 1894, p. 193 (Uruguay, breeds Dec. to Feb.); Lane, Ibis,

1897, p. 178 (Cordilleras of Tarapacá up to 10,000 feet); Sharpe Hand-list B. I. p. 297 (1899); Martens, Hamb. Magalh. Sammelr. p. 6 (1900); Carbajal, La Patagonia, II. p. 260 (1900).

Athene (Speotyto) cunicularia, Oust. Miss. Scient. Cap Horn, Oiseaux, pp. 44, 324 (1891: Salinas, Patagonia).

FIG. 357.



Speotyto cunicularia. Adult male, P. U. O. C. 7915. About half natural size.

GENERAL DESCRIPTION.

Size.—Adult male, 7915, P. U. O. C. Rio Chico de Santa Cruz, Patagonia, 5 March, 1898. A. E. Colburn, collector.

Total length, 8.9 inches.

Wing, 6.8 inches.

Tail, 3.6 inches.

The female is like the male in color and appearance, but noticeably larger. Adult female, 7914, P. U. O. C. Rio Chico de Santa Cruz, Patagonia, 5 March, 1898. A. E. Colburn, collector. Length 10.00; wing 7.30; tail 3.9 inches.

Color.—Adult male cited above. General color dull ash-brown, spotted or marked with white or buffy or ashy white.

Head: Crown and top of head dull ash-brown, each feather with a tear-shaped buffy white spot and the feathers of the occiput with transverse bars of the same color; lores and a narrow eyebrow clear white; the feathers

of the lores with stiff, prolonged, black, hair-like shafts obscuring the white color; ear-coverts, forming the posterior part of facial disk, ash-brown, fulvescent just back of the eye; the facial disk not well defined, but brokenly separated from the crown by the white eyebrow and a crescentic white patch back of the ear-coverts.

FIG. 358.

*Speotyto cunicularia.* Bill and nostril, natural size.

Neck: Back of the neck ash-brown, like the crown, but each feather with a broad subterminal white bar or spot, giving the whole about an evenly mottled appearance; chin white; throat white; the two regions separated by a band of buffy brown feathers.

Back: Interscapular region ashy brown, mottled white, or ashy white spots and bars on all the feathers; the bars are concealed and deeper ashy white, or even buff, as compared with the spots; the lower back, rump and upper tail-coverts similar, but with the buffy barring not concealed.

Tail: Concolor with the back, with a terminal band of buffy white, and crossed by five or more bands of a similar shade, the interval of ground-color being wider than the buffy bars and shaded toward the edges, touching the buffy white with deeper shades of umber-brown; the inner webs of all but the central feathers with white greatly preponderating; from below, the closed tail appears silvery white, with pale ashy brown cross bars.

Primary wings: Quills clear ash-brown at the tips, deeply notched on the inner webs, with white and broad white notches prevailing on the outer webs; secondaries with white tips, barred on the outer webs with buffy white, immaculate silvery nearly to the exclusion of any brown; scapulars like the back; the upper wing-coverts spotted regularly with buffy white, more conspicuously on the greater and median series; under wing-coverts and axillaries silky, silvery white.

Lower parts: Breast, chest and fore part of abdominal region barred rather evenly brown and buffy white, the feathers of the breast with the brown shade prevailing, those of the fore part of the abdomen with the

white or buffy white strongest, and finally the vent and lower abdomen, as well as the under tail-coverts and the feathered portion of the legs, clear, immaculate silvery white, silky in appearance.

Bill: Yellowish, shading into dusky at the base.

Iris: Orange-yellow.

FIG. 359.



Speotyto cunicularia. Emargination of primaries. Natural size.

Feet: The toes bare and with short hairy covering above, the tarsus feathered, except beneath, where it is yellowish green.

The female cited taken on the same day and in the same region is larger than the male and very similar in appearance except that the dark color is stronger on the under surface, the chest, breast and fore-abdomen.

Both birds have evidently only shortly completed the moult and are in exceptionally fine unworn plumage; the suffusion of the colors of the lower parts by the whitish filamentous tips of the feathers is marked.

Young birds of the year and immature individuals from this region have not come under notice, but presumably are like the well known stages of the same age in the congeneric forms prevailing throughout all of South and the western part of North America.

Geographical Range.—South America, from southern Patagonia to Central America in open plain-like country.

On page 121 of his narrative, Mr. Hatcher speaks of this little owl as one of the features of the regions traversed by the Princeton Expeditions, wherever the character of the country was suitable. The birds are per-

haps of all the owls the most diurnal in their habits and extracts from those who have met with them are appended, telling of the life and breeding habits.

O. V. Aplin (*Ibis*, 1894, pp. 193-194) says that the burrowing owl was "common, breeding in the open camp, but usually at no great distance from a group of rocks, on which, and the stunted shrubs among them, they like to sit. The burrows are sometimes in the open ground, sometimes at the foot of, or partly underneath, a boulder. This little owl is 'brava.' Upon any intrusion on its haunts it launches itself into the air and hovers like a kestrel, uttering loud, sharp, rapid, hawk-like cries, and often it will swoop down in a menacing way. With a dog they are especially fierce. I have known a bird repeatedly strike at an old terrier which used to accompany me on shorter excursions, to his great irritation and disgust. The owl would sail gently along, and as it passed over his back (always approaching from the rear), just drop its legs and claw his back, or even his ears. The old dog used to spring up into the air with angry barks and snaps at his tormentor—by that time safe up aloft again. Although the pluckiest dog alive, he could not deal with this aerial enemy, and used to come at last to my feet to escape the annoyance. I have, as it grew dusk, known the owl to strike him when he was only four or five paces from where I stood. Some broods were hatched before and about Christmas (I saw fledged young in the nest at the Rio Negro on the 18th December), and early in February the whole family used to sit about on the rocks, bushes, or camp. The young numbered from two to five. But some appeared to be nesting (again?) at that date, and I knew of one place where there were four used kennels close together. The mouths of the kennels are strewn with the remains of small reptiles, beetles, locusts, etc. The owls do much good by eating the isoca beetles, remains of great numbers being found; most of them are the females. When the owls eat the male beetles they snip off and reject the thorax with its powerful horns; this part is not found in the pellets, but lying separate. The call of this owl is 'coc-coquoi' or 'coc-co-woy,' the last syllable drawn out; sometimes it is 'cocquoi-o.' This calling takes place at sundown, when you can hear the owls all about the camp. The serenade over, they begin to feed in earnest (for though they sit about outside and are quite at ease all day, they feed chiefly after sundown), often hovering like kestrels over the camp and about the trees and plantations of the quinta. Sometimes they scream harshly at night."

Hudson gives an excellent account of the species (P. Z. S. 1874; pp. 308-311): "The Burrowing Owl is abundant everywhere on the open level pampas of the Argentine Republic, and avoids woods but not districts abounding in scattered trees and bushes.

"It sees better than other Owls by day, and never affects concealment, nor appears molested by diurnal sounds and the glare of noon. When a person passes near one it stares fixedly at him, following him with the eyes, the round head turned about as on a pivot. If closely approached, it drops its body in a somewhat playful fashion, emitting a brief scream, followed by three abrupt ejaculations, and if made to fly, goes but fifteen or twenty yards off, and alights again with face towards the intruder; and no sooner does it alight than it repeats the gesture and scream, standing stiff and erect, and appearing beyond measure astonished at the intrusion. By day it flies near the surface with wings continuously flapping, and seldom goes far, and invariably before alighting glides suddenly upwards for some distance and comes down abruptly. It frequently runs rapidly on the ground, and is incapable of sustaining flight long. Gaucho boys pursue them for sport on horseback, taking them in fifteen or twenty minutes. They live in pairs all the year, and sit by day at the mouth of the burrow or on the Vizcacha's mound, the two birds so close together as to be almost touching; when alarmed they both fly away, but sometimes the male only, the female diving into the burrow. Their sitting on the ground may be more from necessity than choice, as they usually perch on the summits of bushes where such abound.

"These are the commonest traits of the Burrowing-Owl in the settled regions, where it is excessively numerous and familiar with man; but in the regions hunted over by the Indians it is scarce, and in some of its habits quite a different bird. Shy of approach as a persecuted game-fowl, it rises to a considerable height in the air when the approaching traveller is yet far off, and flies often beyond sight before descending again to the earth. This wildness of disposition is, without doubt, traceable to the active animosity of the pampa tribes, who have all the ancient widespread superstitions regarding the Owl. Sister of the Evil Spirit is one of their names for it. They hunt it to death whenever they can, and, when travelling, will not stop to rest or encamp on the spot where an Owl has been seen. As soon as the plains are settled by whites, the bird drops this wary habit, and becomes exceedingly tame. They are also

tenacious of the spot they live in, and are not, like the Pipit and Spurred Lapwing, driven out by cultivation. When the fields are ploughed up, they burrow on the borders of the ditches, and sit on the wayside fences, and are so tame that a rider can easily knock them down with his whip. Several pairs live near my house; and when a person rides up to within three or four yards of a burrow the birds only snap and hiss and ruffle up their feathers, refusing to fly away.

"Occasionally the owls are seen preying by day, especially when anything passes near, offering the chance of an easy capture; often I have amused myself throwing bits of earth near one as it sat by its kennel; for the bird will immediately give chase, only discovering its mistake when the stone is firmly clutched in its talons. When rearing their young they are perhaps quite as active by day as by night. On the hot days of November multitudes of two large species *Scarabæus* appear; and the bulky bodies and noisy bungling flight of these beetles invite the owls to pursuit; and on every side they are seen chasing and striking down the beetles, and tumbling upon them in the grass. Owls have a peculiar manner of taking their prey: they grapple it so tightly in their talons that they totter and strive to steady themselves by throwing out their wings this way and that, and, often losing their balance, fall prostrate, and flutter on the ground. If the animal captured be small, they proceed after a while to dispatch it with the beak; if large, they usually rise laboriously from the earth, and fly to some distance with it, thus giving time for the wounds inflicted with their claws to do their work.

"How remarkable it is that the *Tænioptera* (so different in structure from owls) should resemble them in the peculiar manner of seizing their prey!

"The *Tænioptera* frequently darts upon a large insect on the ground, and, grasping it with its feet, flutters and totters precisely like an owl. This habit I have observed in four species of *Tænioptera*.

"At sunset the Burrowing Owls begin to hoot; a short followed by a long note is repeated many times, with an interval of a second of silence. There is nothing dreary or solemn in this preformance; but it is rather soft and sorrowful, somewhat resembling the lowest notes of the flute in sound. In spring they hoot a great deal, many birds responding to each other.

"In the evening they are often seen hovering at a height of forty yards

above the surface, and continuing a minute or longer without altering their position. They do not drop the whole distance at once on their prey, but descend vertically, tumbling and fluttering, as if wounded, to within 10 yards of the earth, and then, after hovering a few seconds more, glide obliquely upon it. They prey on every living creature not too large to be overcome by them. Sometimes they sever off and leave untasted the head, tail, and feet of a mouse. The hind quarters of frogs and toads are almost invariably rejected; and inasmuch as these are the most fleshy and succulent parts, this is a strange and unaccountable habit. They make an easy conquest of a snake 18 inches long, and kill it by dealing it blows with the beak, hopping briskly about it all the time, and appearing to guard themselves with the wings. Many individuals become destructive to poultry-yards, carrying off the chickens by day. In seasons of plenty they destroy more prey than they can devour; but in severe winters they come, apparently starving, about the houses, and will then stoop to carry off any dead animal food, though old and dried up as a bit of parchment. This I have often seen them do. Though the owls are always on familiar terms with the Vizcachas, and occasionally breed in one of their neglected burrows, they generally excavate their own burrows. The kennel is crooked, and varies greatly in length, from 4 to 12 feet. The nest is at the extremity, composed of wool and dry grass, often exclusively of horse dung. The eggs are five, white, and nearly spherical. After the female has begun laying, the birds continue to carry in dry horse dung, until the floor of the burrow and a space before it is thickly carpeted with this material. The following spring the loose earth and rubbish is cleared out, for the same burrow may serve them two or more years. It is always untidy, but mostly so during the breeding season, and when prey is very abundant, the floor and ground about the entrance being often littered with excrements and pellets of hair and bones, wing-cases of beetles, and feathers, hind quarters of frogs in all stages of decay, the great hairy black spiders of the pampas, and remains of half-eaten snakes and other unpleasant creatures they subsist on. But all this carrion about the owl's disordered house reminds one forcibly of the important part assigned to it in the natural economy. The young birds ascend to the entrance of the burrow to bask in the sun and receive the food their parents bring; when approached they become irritated, snapping with their beaks, and appearing reluctant to enter the burrow; but for some weeks after learning to fly

they make it their refuge from danger. Old and young birds often live four or five months together. I believe nine-tenths of the owls in this country make their own burrows; but as they occasionally prefer breeding in the forsaken burrows of mammals to mining themselves, it is probable they would almost always observe this last habit did suitable burrows abound.

"I have never seen any complete account of the North-American form of this owl, but presume its habits are now well known, as all matters connected with science receive so much attention in that country. From such stray notices of the bird as I have met, I learn that it inhabits and invariably breeds in the kennels of the prairie-marmot. The small, neat burrows of that mammal must be far better suited to its requirements than the vast ones excavated by Vizcacha.

"Probably the burrowing owl originally acquired the habit of breeding in the earth in open level bare regions; and when this habit (favourable as it could but be in such shelterless places) had become ineradicable, a want of suitable burrows would lead it to clean out such old ones as had become half filled with rubbish, to deepen such as were too shallow, and ultimately to excavate new ones.

"In Buenos Ayres the mining instinct varies greatly in individuals. In the birds that breed in Vizcachas' burrows the instinct is doubtless weak; they can hardly be said to possess it.

"Some pairs, long mated, only begin their burrows when the breeding season is already on them; others make their burrows as early as April—that is, six months before the breeding season. Generally both birds work, one standing by and regarding operations with an aspect of grave interest, and taking its place in the burrows when the other retires; but sometimes the female makes the kennel without any assistance from her partner. Some pairs work expeditiously, and their burrows are deep and neatly made; others go about their task in a perfunctory manner, and begin and immediately abandon perhaps half a dozen burrows, and then rest two or three weeks from their unprofitable labours. But, whether industrious or indolent, by September they all have their burrows made.

"Most, if not all, the writers who have mentioned our bird err in speaking of its burrowing habits. Azara was perhaps the first to say that it never constructs its own habitations. Molina (usually judicious) flies to the opposite extreme, and asserts, on the authority of P. Fuielle, that it

burrows to such an amazing depth in the earth, that only the incomparable zeal and industry of Fuielle himself has enabled us to know the nesting habits of the bird.

"Fuielle's profound investigations resulted in the discovery that the eggs of the burrowing owl are speckled!"

In his *Naturalist in La Plata* (pp. 298-299) the same author writes: "Standing on the mound there is frequently a pair of burrowing owls (*Pholeoptynx cunicularia*). These birds generally make their own burrows to breed in, or sometimes take possession of one of the lesser outside burrows of the village; but their favourite residence, when not engaged in tending their eggs or young, is on the vizcachera. Here a pair will sit all day; and I have often remarked a couple close together on the edge of the burrow; and when the vizcacha came out in the evening, though but a hand's breadth from them, they did not stir, nor did he notice them, so accustomed are these creatures to each other. Usually a couple of the little burrowing *Geositta* are also present. They are lively creatures, running with great rapidity about the mound and bare space that surrounds it, suddenly stopping and jerking their tails in a slow deliberate manner, and occasionally uttering their cry, a trill or series of quick short clear notes, resembling somewhat the shrill excessive laughter of a child. Among the grave, stationary vizcachas, of which they take no heed, perhaps half a dozen or more little swallows (*Atticora cyanoleuca*) are seen, now clinging together to the bank-like entrance of a burrow, now hovering over it in a mothlike manner, as if uncertain where to alight, and anon sweeping about in circles, but never ceasing their low and sorrowful notes." (Huds. Natur. La Plata, 1892, pp. 298-299.)

And (pp. 66-67): "By August (1873) the owls had vanished, and they had, indeed, good cause for leaving. The winter had been one of continued drought; the dry grass and herbage of the preceding year had been consumed by the cattle and wild animals, or had turned to dust, and with the disappearance of their food and cover the mice had ceased to be. The famine-stricken cats sneaked back to the house. It was pitiful to see the little burrowing owls; for these birds, not having the powerful wings and prescient instincts of the vagrant *Otus brachyotus*, are compelled to face the poverty from which the others escape. Just as abundance had before made the domestic cats wild, scarcity now made the burrowing owls tame and fearless of man. They were so reduced as scarcely to be able to fly,

and hung about the houses all day long on the look-out for some stray morsel of food. I have frequently seen one alight and advance within two or three yards of the door-step, probably attracted by the smell of roasted meat. The weather continued dry until late in the spring, so reducing the sheep and cattle that incredible numbers perished during a month of cold and rainy weather that followed the drought." (Huds. Natur. La Plata, 1892, pp. 66-67.)

Genus GLAUCIDIUM Boie.

Type.

Glaucidium, Boie, Isis, 1826, p. 976; Sharpe, Cat. Bds.

Brit. Mus. ii. p. 188 (1875); Sharpe, Hand-list Bds.

i. p. 297 (1899) *G. passerinum*.

Nyctipetes, Swains. Classf. B. ii. p. 218 *G. perlatum*.

Tænioglaux, Kaup, Isis, 1848, p. 769 *G. radiatum*.

Tænioptynx, Kaup, l. c. p. 768 *G. brodiei*.

Microglaux, Kaup, l. c. p. 769 *G. perlatum*.

Microptynx, Kaup. Contr. Orn. 1852, p. 106 *G. passerinum*.

Smithiglaux, Bp. Rev. et Mag. de Zool. 1854, p. 544 *G. capense*.

Phalænopsis, Bp. l. c. p. 544 *G. nanum*.

Geographical Range.—Common to both hemispheres; absent from the Austro-Malayan and the Australian region proper; reaching into the western portion of North America to British Columbia, but absent from the region east of the Rocky Mountains, except in southern Texas.

GLAUCIDIUM NANUM (King).

Strix nana, King, Zool. Journ. III. p. 427 (1827: Port Famine).

Glaucidium nanum, Kaup, Contr. Orn. 1852, p. 103; id. Trans. Zool. Soc.

IV. p. 202 (1853); Hartl. Naum. 1853, pp. 209, 220 (Valdivia); Burm.

Reis. La Plata, II. p. 441 (1861); Scl. P. Z. S. 1867, p. 338 (Chili);

id. and Salv. Ibis, 1868, p. 188 (Sandy Point, May); Huds. P. Z. S.

1872, p. 549 (Rio Negro); Scl. & Salv. Nomencl. Av. Neotr. p. 117

(1873: Chili); Ridgw. Proc. Bost. Soc. Nat. Hist. xvi, p. 104 (1873);

Sharpe, Ibis, 1875, pp. 41, 259; id. Cat. B. Brit. Mus. II. p. 190

(1875: Port Famine and Straits of Magellan: Rio Negro); id. P. Z. S.

1881, p. 11 (Sandy Point, Jan.); Doering, Expl. al Rio Negro, Zool.

p. 49 (1882: Choelechoel); White, P. Z. S. 1883, p. 41 (Córdoba,

June and July); Salv. t. c. p. 426 (Chili); Vincig. Boll. Soc. Geogr.

Ital. (2) IX. p. 797 (1884); Burm. An. Mus. Nac. Buenos Aires, III, part x, p. 242 (1888: Patagonia); part xi, p. 316 (1890: Rio Chico del Chubut); Scl. & Huds. Argent. Orn. II. p. 56 (1889; Rio Negro, Patagonia); Ridgw. Proc. U. S. Nat. Mus. XII, p. 136 (1889: Laredo Bay); Oust. Miss. Scient. Cap Horn, Oiseaux, pp. 45, 324 (1891: Beagle Canal, Nov.; Orange Bay, Feb.); Frenzel, J. f. O. 1891, p. 115 (Córdoba); James, New List Chil. B. p. 6 (1892); Lane, Ibis, 1897, p. 177 (Rio Bueno, breeds Dec. and Jan.); Sharpe, Hand-list B. I, p. 297 (1899); Salvad. Ann. Mus. Genov. (2), xx, p. 615 (1900: Punta Arenas, May); Martens, Hamb. Magalh. Sammelr. p. 6 (1900: Patagonia); Carbajal, La Patagonia, part II, p. 260 (1900).

FIG. 360.



Glaucidium nanum. Adult male, P. U. O. C. 7877. Two-thirds natural size.

Athene ferox, Fraser (nec Vieill.), P. Z. S. 1843, p. 109 (Chili).

Athene nana, Gray & Mitchell, Gen. B. I. p. 35, pl. xii (1844); Hombr. & Jacq. Voy. Pole Sud. Zool. III. p. 54 (1845); Pelz. Reis. Novara, Vög. p. 25 (1865: Chili).

Noctua nana, Des Murs in Gay's Hist. Chil. Zool. I. p. 246 (1847); Schl. Mus. Pays Bas, Striges, p. 25 (1862); Phil. & Landb. Cat. Av. Chil. p. 6 (1868).

Athene leucolaima, Bp. Consp. Av. I. p. 40 (1850).

Strix chilensis, Licht. Nomencl. Av. Mus. Berol. p. 8 (1854).

Phalænopsis nana, Bp. Compt. Rend. xli. p. 654 (1855).

Phalænopsis leucolaima, Bp. tom Cit. p. 654.

GENERAL DESCRIPTION.

Size.—Adult male, P. U. O. C. 7877, Punta Arenas, Chili (Straits of Magellan), 2 January, 1898. A. E. Colburn, collector.

Total length, 6.8 inches.

Wing, 3.75 inches.

Tail, 2.45 inches.

Adult female. Like the male in appearance but larger; length 7.80; wing 4.25; tail 2.8 inches.

Color.—Adult male cited above.

FIG. 361.



Glaucidium nanum. Adult male, P. U. O. C. 7877. Natural size.

Head: Above, dull ash-brown, streaked on the forehead plainly and elsewhere more obscurely with silvery white; lores and region about the eye white, the lores with many black hair-like bristles obscuring the underlying feathers; facial disk dull ash-brown, streaked with silvery white; a more or less well defined margin of silvery white encircling the facial disk from the white of the lores to the white on the throat.

Neck: With a collar on the nape, whitish in color, with some black markings, scattered on the nape, but forming two black patches, one at either terminus of the white collar, on the sides of the neck; chin pure silvery white, defined by a dark brown band crossing the upper throat;

the rest of the lower neck following the band white like the chin, forming a triangular patch just above the breast.

Back: Interscapular region concolor with the crown, dull ash-brown, the feathers streaked finely with ashy white; the lower back like the interscapular region, shading into rich chestnut rufous on the rump; the upper tail-coverts rich chestnut, with obsolete narrow bars of ashy brown.

Tail: Deep seal-brown, tipped with chestnut and crossed by nine or ten narrow bright chestnut bars; seen from below, the tail shows dull ashy brown, with a silvery gloss, the bars are dull rufous on the outer webs and on the inner part of the inner webs, but shade into pure white on the outer edges of the inner webs.

FIG. 362.



Glaucidium nanum. Adult male, P. U. O. C. 7877. Emargination of primaries. Natural size.

Wings: Quills all dark brown, ashy in tone; barred obscurely with a brighter shade of brown, notched on both webs with white spots; scapulars darker than the back and with an obscure rufescent shading or gloss, mottled on the outer webs with white oval spots, which together form bar of white or show as a series of white markings; upper wing-coverts dull ash-brown, sparsely spotted with silvery white; the greater series with large white spots defined by narrow black borders at the tips; under wing-coverts yellowish white, silky in character and slightly striped with dull brown.

Lower parts: Sides of the breast dull ash-brown, with obscure white mottling; sides of the body dull ash-brown; the rest of the under body

white, broadly streaked with dull ash-brown; the thighs yellowish brown, barred with dusky brown; under tail-coverts white, broadly streaked with dull ash-brown.

Bill: Bluish horn, becoming yellow at the tip.

Iris: Orange-yellow; in some individuals straw-yellow.

FIG. 363.



Glaucidium nanum. Feathering of foot. Natural size.

Feet: Feathered to the toes; the feathering on the tops of the toes silky, hair-like and with obscure brown markings on a whitish ground.

The adult female is like the adult male in color.

Young birds of the year and immature birds have a tendency to a reddish-brown suffusion and the spotting of lighter shade, which is white or inclined to white; in the adults is never white, but always yellowish-buff; the whole upper surface is more uniform, the streaking and spotting being obscured.

An adult female, 7876, P. U. O. C., Pacific Slope, upper waters of Rio Chico de Santa Cruz, Cordillera of Patagonia, 13 March, 1897, J. B. Hatcher, is much more reddish throughout than are other birds taken at the same time and place and suggests two phases of adult dress in the species.

Geographical Range.—Chili and Patagonia; northern Tierra del Fuego; Argentine Republic as far north as 33° south latitude (Córdoba).

This dwarf owl was found by the Princeton naturalists wherever they were in a partly wooded or in open country where there was some bush or tree growth. The series collected by these workers forms the basis of the above descriptions, and it is noticeable that the birds appear to be smaller than those used by other systematists; this applies to both sexes.

The birds breed throughout their range in December and January and appear to be resident where they occur.

E. W. White (P. Z. S., 1883, p. 41) records two specimens as follows:

"Male. Cosquin, Cordova, Arg. Rep., June 23, 1882.

"Female. Cosquin, Cordova, Arg. Rep., July 27, 1882.

"Iris yellow.

"It causes the naturalists much amusement to watch the habits of this pretty owl, that, perched perfectly motionless on a branch, utters such a sirenic cry as to attract little birds in great numbers. They are observed to cluster round it, all the while fluttering and in great excitement, charmed by some fascination. After waiting a while, the owl suddenly pounces upon the nearest for its victim. The natives call it 'el rey de los pajaritos' (the king of the little birds)."

Family TYTONIDÆ.

Genus TYTO Billberg.

Type.

Strix, Sharpe, Cat. Bds. Brit. Mus. ii, p. 290 (1875);

Sharpe, Hand-list Bds. i. p. 300 (1899) (nec.

Linn.) *S. alba*.

Aluco, Fleming, Phil. Zool. ii. p. 236 (1828) . . . *S. alba*.

Tyto, Billberg, Syn. Faunæ Scand. I. ii, tab. A (1828) *S. alba*.

Hybris, Nitzsch, Pteryl. p. 100 (1840) *S. flammea*.

Stridula, Selys-Longch. Faun. Belge, p. 60 (1842) . *S. alba*.

Eustrinx, Webb. & Berth. Orn. Canar. p. 8 (1844) . *S. alba*.

Megastrix, Kaup, Isis, 1848, p. 769 *S. tenebricosa*.

Glaux, Blyth, J. A. S. B. xix. p. 513 (1850) . . . *S. candida*.

Scelostrix, Kaup, Contr. Orn. 1852, p. 119 . . . *S. candida*.

Dactylostrix, Kaup, Contr. Orn. 1852, p. 119 . : *S. novæ hollandiæ*.

Glyphidiura, Reich. Syst. Nat. pl. xcii, fig. 2 . . *S. capensis*.

Cf. Sharpe, Ibis, 1875, p. 324.

Geographical Range.—The whole world except the extreme north and south land areas; absent from New Zealand and certain of the islands of the Malayan sub-region and Oceania.

TYTO PERLATA (Licht.).

The common Barn Owl or White Owl, Albin, Nat. Hist. B. II. p. 11, pl. xi (1738).

Strix aluco, Linn. Syst. Nat. I. p. 93 (1758); Le petit Chathaunt, Briss. Orn. I. p. 503 (1760).

Strix flammea, Linn. Syst. Nat. I. p. 133 (1766); Darw. Voy. Beagle, Birds, p. 34 (1841: Bahia Blanca, N. Patagonia); Des Murs in Gay's Hist. Chil. Zool. I. p. 255 (1847); Pelz. Reis. Novara, Vög. p. 29 (1865: Chili); Phil. & Landb. Cat. Av. Chil. p. 7 (1868); Scl. & Salv. Nomencl. Av. Neotr. p. 116 (1873); Sharpe, Cat. B. Brit. Mus. II.

FIG. 364.



Tyto perlata. Adult male, P. U. O. C. 7883. About one-third natural size.

p. 291 (1875: Bahia Blanca); Durnf. Ibis, 1877, p. 187 (Buenos Aires); White, P. Z. S. 1882, p. 622 (Concepcion, Misiones, June); Burm. An. Mus. Nac. Buenos Aires, III. part X. p. 242 (1888: Northern Patagonia); Withington, Ibis, 1888, p. 468 (Lomas de Zamora); Scl. & Huds. Argent. Orn. II, p. 48 (1889); Holland, Ibis,

1892, 203 (Estancia Espartilla, uncommon, breeds occasionally); Albert, Contr. Estud. Av. Chil. I. p. 168 (1898); Sharpe, Hand-list B. I. p. 300 (1899); Martens, Hamb. Magalh. Sammelr. p. 6 (1900: Cape Virgins, South Patagonia).

Lechuza, Azara, Apunt. I. p. 210 (1802).

Strix perlata, Licht. Verz. Doubl. p. 59 (1823: Brazil); D'Orb. Voy. Amér. Mérid. p. 135 (1835: Patagonia); Fraser, P. Z. S. 1843, p. 110 (Chili, rare); Des Murs in Gay's Hist. Chil. Zool. I. p. 257 (1847); Hartl. Naum. 1853, p. 220 (Chili); Burm. Reis. La Plata, II. p. 440 (1861); Phil. & Landb. Cat. Av. Chil. p. 7 (1868); Sharpe, Cat. B. Brit. Mus. II. p. 300 (1875); Doering, Expl. al Rio Negro, Zool. p. 49 (1882); Phil. Ornith. IV. p. 158 (1888: Pica, Tarapacá); Carbajal, La Patagonia Part II. p. 260 (1900).

Aluco flammeus, Barrows, Auk, I. p. 29 (1884; Lower Uruguay, common resident).

FIG. 365.



Tyto perlata. Adult male, P. U. O. C. 7883. Detail of face. Natural size.

GENERAL DESCRIPTION.

Size.—Adult male, 7883, P. U. O. C., upper waters Rio Chico de Santa Cruz, Pacific Slope Cordillera, Patagonia, 16 March, 1897. J. B. Hatcher.

Total length, about 13.75 inches.

Wing, 11.60 inches.

Tail, 4.90 inches.

An adult female from the same locality, 14 March, 1897, J. B. Hatcher, is similar to the male in color, but a little darker generally; the bird is larger; length 14.30; wing 12.10; tail 5.25 inches.

Color.—Adult male cited above.

Head: With pronounced facial disks and without ear-tufts. Top and back of head pale buffy yellow, overlaid sparingly with a grayish tint, finely mottled and speckled with dusky and silvery white; facial disk pure white, with a triangular deep chestnut spot in front of the eye; feathers of the ruff defining the disk shining silvery white, the terminating ones with a subterminal bar of buffy yellow and a narrow terminal margin of black or blackish; this ruff defining the facial disk begins at the base of the upper mandible, reaches around back of the ear and is continuous to the other side of the head, terminating, as it began, at the base of the upper mandible; the feathers of the disk proper stiffly filamentous, so as to present a more or less hairy aspect.

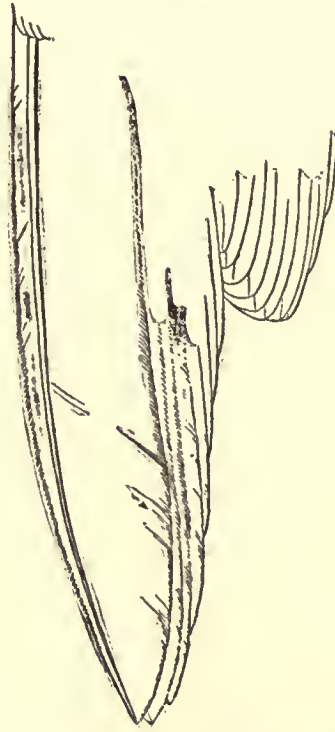
Neck: The nape of the neck like the back of the head: the sides of the same buffy yellow, each feather marked near the end with a minute triangular greyish brown spot; the chin and throat silvery white, with an obsolete wash of very faint buff and some scattered tiny greyish brown spots on some of the feathers.

Back: Interscapular region buffy yellow, brighter than on the head, the feathers much more overlaid with silver-grey, mottled with dusky and white, and with a definite white arrow-shaped spot on most of the feathers, bounded by dark brown; the lower back much the same, but deeper colored and more obscured by grey, the arrow-shaped markings not definite; upper tail-coverts similar.

Tail: The two central rectrices pale buffy white; the others, except the two outer ones on each side, pale buffy white on their exposed webs and pure silver-white on the inner webs; the two outer rectrices with a wholly white ground color; all the rectrices crossed, more or less distinctly, by six dusky-brown bars only a third as wide as the intervening ground color; on most of the feathers there is also some flecking of brown in minute dots and spots, more pronounced near the tips.

Wings: Quills pale buffy, rather lighter than the prevailing shade

FIG. 366.



Tyto perlata. Adult male, P. U. O. C. 7883. Showing relative length of quills.

above, and shading to white on the tips and inner webs; the primaries with irregular fine flecking of brown obscured by grey, most plentiful near the tips, and barred brokenly with six or seven dark brown bars, not entire, crossing the feathers; secondaries much like the primaries, but with definite broad white tips; the least wing-coverts buffy, with small spots of dusky on each feather; median series like the interscapular region; primary coverts much deeper brownish buff, with fleckings of dusky on a greyish overwash and arrow-shaped pale buff spots near the end of each feather; under wing-coverts pure silvery white, a few of the lesser series with small brown marks; the axillaries immaculate silvery white; the whole closed wing seen from below is pure white, showing only the bars on the first primary.

Lower parts: Silvery white and silky in character; washed on the sides and flanks and across the breast and chest with pale buff or cream color, each feather in these places with a small arrow-shaped brown subterminal mark; rest of the under body immaculate white; the leg feathers, except for a buffy wash exteriorly on the thighs, immaculate white; under tail-coverts pure silvery white.

Bill: Pale yellowish white (Hatcher).

Iris: Dull blue (Hatcher).

FIG. 367.



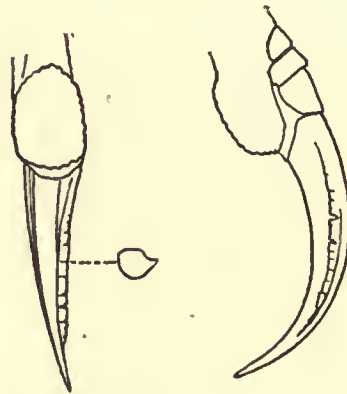
Tyto perlata. Feathering of foot. Natural size.

Feet: Feathered except on the upper surface of the toes, where there are sparse white hairy plumules.

Adult female, 7884 P. U. O. C. Upper waters Rio Chico de Santa Cruz, Pacific Slope, Cordillera, Patagonia, 14 March, 1897, J. B. Hatcher. Similar to the male, but a little larger. The colors throughout are somewhat emphasized; there is more silver-grey wash on the head, back and wings; the lower surface is almost entirely washed with buffy, and the terminal arrow-shaped markings of deep brown prevail on most of the feathers, extending to the exterior of the thighs and to the belly proper; the vent and lower tail-coverts immaculate; "eye dull blue; beak pale yellow" (Hatcher).

There does not appear at the present time material available on which to base descriptions of immature birds, or nestlings; young birds of the year after moulting the first plumage, ten weeks after assuming it, at which time all the feathers except the quills and rectrices are renewed, look much like adults.

FIG. 368.



Tyto perlata. Details of claws. Twice natural size.

Geographical Range.—Wooded region of Patagonia and Chili except at high altitudes. (The race of small white barn-owls of this region is nearer in size and in the color of the light phase of plumage to the European form than are other American forms, even those near at hand. The foregoing is, so far as we know, the present range.)

The Barn Owl as found in Patagonia is an uncommon bird. The Princeton naturalists were fortunate to meet with it; but they found the birds only in the region at the head waters of the Rio Chico de Santa Cruz, and even here only two individuals were secured. As indicated above these two birds in appearance and measurements appear to be indistinguishable from the bird as it occurs in England. The birds are alike in size with their European relatives and, so far as the light phase of plumage is concerned, not to be separated by color. So far, no dark plumage birds have been brought to light from this part of South America. Birds from the vicinity of Buenos Aires, five specimens all in the light plumage, are very like the two Patagonian individuals, but they average much larger, nearly an inch, both sexes being represented. All the birds from the La Plata region are light colored; Mr. Barrows found the birds common and breeding at Concepcion in Lower Uruguay, but he does not refer to any birds in the dark phase of plumage.

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